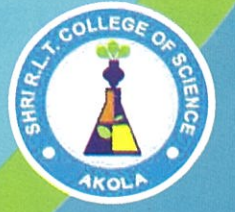


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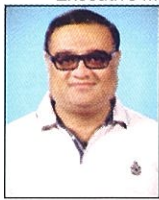
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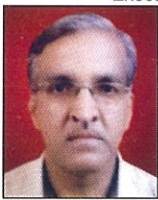
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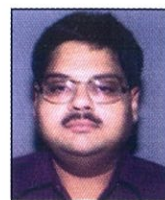
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Shri Radhakisan Laxminarayan Toshniwal College of Science dedicates itself to the cause of science education and propagation of scientific temper among the students, it seeks to mould a student into a multifaceted person with a pragmatic mind and a humane out look capable of facing the challenges of the 21st century. Shri R.L.T. College expects every student entering its portal to be a disciplined, hardworking, well read member of the community ready to give his best to the country.

प्रतिबिंब

॥ २०१८ - २०१९ ॥

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- ❖ हिंदी विभाग : रूपेश पचोरी
- ❖ इंग्रजी विभाग : योगेश इरछे

संयोजक मंडळ

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- Editorial

Dr. Vijay D. Nanoty
Mr. Mangesh R. Ubale

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Principal's Message...

It gives me immense pleasure in presenting the college magazine 'Pratibimb' for the session 2018-19. I congratulate you all on bringing out such a beautiful magazine.

Shri R.L.T. College of Science endeavors to inspire and empower students to be lifelong learners and critical thinkers and productive members of an ever changing global society. The entire atmosphere of the college is permeated by the spirit which promotes collaboration and cooperation leading to a human family of peace and harmony.

I am sure that the students of the college will be benefitted largely from the informative and innovative as well as educative contents of the magazine.

I am immensely grateful to The B.G.E. Society, Akola especially Hon'ble Office Bearers and all the executive members for their time to time guidance and inspiration.

Shri R.L.T. College of Science is one of the prominent science college in Vidarbha. The college is recently re-accredited with 'A' grade with 3.12 CGPA and is going to celebrate 50 years of glory.

I heartily congratulate the editorial board who have taken pains to bring out this magazine adding glory to Shri R.L.T. College of Science.

To sum up, I expect my students and the staff to be sincere, responsible and committed to their work.

Dr. Vijay D. Nanoty

Principal

Shri R.L.T. College of Science, Akola

Editorial.....



Mr. Mangesh R. Ubale



Dr. Pradip P. Deohate



Dr. Archana S. Sawarkar



Prof. Arun B. Khedkar



Ms. Asmita N. Gadge



Mr. Rupesh S. Pachori



Mr. Yogesh H. Irache

It is a matter of pride for me being a part of college magazine committee 'Pratibimb' 2018-19 of Shri R.L.T. College of Science, Akola which provides a platform for every student to develop their learning skill and also provides an atmosphere that creates positive temperament among students.

Our budding talents have expressed their thoughts, ideas, feelings in a creative way. In fact this is how they broaden their intellectual horizons. Thus, the college magazine reflects how the college has been able to live up to its aim providing quality education to all the students. I am thankful to the management and the principal Dr. V.D. Nanoty Sir for encouraging me and my editorial board for being a source of inspiration. I am also thankful to my editorial board Dr. P.P. Deohate, Prof. A.B. Khedkar and Dr. Mrs. Archana Sawarkar and student members for their cooperation, support and putting in their best in bringing out this issue of our college magazine.

Mr. S. Ubale

Mr. Mangesh R. Ubale

Editor



Marathi Section

किती हा कचरा

एका गावात मिनु, राधा, अक्षय, शुभम व राघव हे मित्र-भैत्रिणी राहायचे. या मित्र-भैत्रिणीचा कट्टा दररोज मैदानात असलेल्या पिंपळाच्या झाडाखाली जमायचा. नेहमीसारखे शाळा, गृहपाठ आटोपून सर्वजण खेळायला जमले. पाहाताय तर पूर्ण मैदान खरखटे होते. अख्ये मैदान कचऱ्यानी भरलेले त्यांनी खेळण्याचा विचार सोडून दिला व पिंपळाच्या झाडाखाली आले, तर तिथेही कचरा. मिनु म्हणाली, "आज झालाय तरी काय सकळीकडे कचराच कचरा", राधा म्हणाली, "इथे इतका कचरा आलाच कसा?" शुभम म्हणाला, "अरे होना या कचऱ्यामुळे खेळायला भेटलेच नाही, मी खेळण्यासाठीच तर लवकर गृहपाठ केला. अक्षय आणि राघव म्हणाले, "यार, आम्ही फुटबॉल खेळण्याचे ठरविले होते." मुलांचे संवाद बाजुला बसलेले माधव काका ऐकत होते. माधव काका हे महानगरपालिकेतील निवृत्त अधिकारी होते. मुलांचे बोलणे ऐकल्यावर शेवटी माधव काका म्हणाले, "मुलांनो महानगरपालिकेच्या कर्मचारी लोकांनी टाकला आहे इथे कचरा ! शुभम म्हणाला का टाकला कचरा काका त्यांनी इथे ? माधव काका उत्तरले, "बाळा शहरातल्या डपिंग ग्राऊंडमध्ये जागाच उरली नाही आहे, घन कचऱ्याचे प्रमाण एवढे वाढले आहे की, दररोज पूर्ण शहराचा जमा होणारा कचरा ठेवायचा तरी कुठे ? म्हणून त्यांनी इथे आणून टाकला आहे. राधा म्हणाली, "मग आता आम्ही खेळायचे तरी कुठे ?" हे ऐकून राघव तिला गप्प करीत म्हणाला, "ही खूप मोठी अडचण आहे गा, आणि तु खेळण्याचे विचार करतीये. मिनु म्हणाली, "राघव बरोबर बोलतोय तु" नंतर माधव काकांना म्हणाली, "इतका कचरा अचानक कुठून आला काका?" तर माधव काका म्हणाले, "आपणच निर्माण केला आहे हा कचरा".

माधव काकांच्या या उत्तरावर सर्वजण ओरडले, "आमच्यामुळे कसे ?" माधव काका म्हणाले, "मुलांनो, तुम्ही सहलीला जाता, तेव्हा मस्त चमचमीत पदार्थांचे पाकीटे घेता किंवा पाण्याची बाटली घेता तेव्हा खारून-पिऊन झाल्यावर त्यांचे काय करता ? हे ऐकताच राधा म्हणाली "आम्ही ती फेकून देतो", माधव काका म्हणाले, "दैनंदिनी जीवनात आवश्यक असलेल्या व नसलेल्या वस्तुंची असलेली भरमसाठ उत्पादने व सहज उपलब्धता त्यामुळे कोणतीही वस्तु लोकं जपून वापरत नाही जेणे करून फक्त वापरून फेकून द्यायचे ही वृत्ती माणसांमध्ये रूजत आहे. घरगुती ओला व सुका कचऱ्याचे व जैविक कचरा जे विविध कारणांनी निर्माण होतो त्यांची योग्य विल्हेवाट न लावण्यामुळे कित्येकदा गंभीर समस्यांना आपणास तोंड द्यावे लागते. विविध आजारांशी सामना आपणास करावा लागतो. उदा. डेंगू, मलेरिया इत्यादी. यांचे जीवाणू कचऱ्यातच वाढतात, पण त्याहून ही गंभीर आहे प्लास्टीकमुळे होणारी पर्यावरणाची हानी. हे ऐकून शुभम व मिनु म्हणाले, "काका पर्यावरणाला हानी कशी पोहचते ?" माधव काका उत्तरले, "प्लास्टीकचे नैसर्गिक विघटन होत नाही व ते वर्षानुवर्षे तसेस राहते शिवाय त्याला जाळले तर घातक अशा हरित-वायु उत्सर्जित करतो त्यामुळे पृथ्वीवर असलेल्या ओझोन थराला क्षति पोहचते व पृथ्वीचे तापमान वाढून समृद्ध पातळी वाढते. एवढा वेळ गप्प असलेला अक्षय म्हणाला, "हो काका आमच्या शाळेतल्या बाईंनी आम्हाला शिकविले होते हे विज्ञानाच्या तासाला आणि त्या म्हणाल्या होत्या की हे कचरा जर उघड्यावर टाकून दिला तर भटके प्राणी-पक्षी हे ते प्लास्टीकचे तुकडे खातात व त्यामुळे त्यांचे आरोग्य बिघडते प्रसंगी मृत्युही होतो." हे सर्व ऐकून सर्व मुले सुन्न झाली. थोड्या वेळाने राघव म्हणाला, "काका याला आपण कसे थांबवू शकतो?" काका म्हणाले, "कमीत-कमी प्लास्टीकचा वापर करायचा व त्याचा पुर्नवापर करायचा, ओल्या व सुक्या घरगुती कचऱ्याची योग्य विल्हेवाट लावायची. आपण घरातल्या ओल्या कचऱ्याचा वापर झाडांसाठी खत म्हणून वापरू शकतो व शासनाने नियम व कायदे जे कचऱ्यासाठी आखून दिलेले आहेत ते पाळायला हवे जेणेकरून कमीत-कमी कचऱ्याची निर्मिती होईल. हे ऐकून सर्व मुले म्हणाली, "होय काका, आम्ही हे सर्व अंमलात आणू व लोकांना यासाठी जनजागृती करू." माधव काका म्हणाले, "मुलांनो, ही पृथ्वी, वसुंधरा आपली आहे, हिचे रक्षण आपले कर्तव्य आहे."

कु. रानी खुरानिया

बी.एस्सी. भाग-२

घनकचरा व्यवस्थापन

घनकचरा म्हणजे काय ? :- रोजच्या वापरातून उरलेल्या निरूपयोगी वस्तूंचा साठा म्हणजे 'घनकचरा' होय. आपल्या घरात, कार्यालये, औद्योगिक संस्था, भाजी मंड्या, रूग्णालये, दुकाने, उपहार गृहे, सार्वजनिक संस्था, बांधकामे, इत्यादी या सर्वच ठिकाणाहून अनेक वेगवेगळ्या प्रकारचा कचरा रोजच्या-रोज तयार होतो; त्यास "घनकचरा" असे म्हणतात.

आपल्या भारतातील बरेचसे अशिक्षित तसेच सुशिक्षित लोक त्यांच्या घरातील कचरा तसेच टाकाऊ वस्तु सरळ घराबाहेर फेकून देतात. तसेच सोसायटीच्या आवारात, रस्त्यावर, नदीमध्ये, नाल्यामध्ये अगदी कुठेही आपण कचरा फेकतो. याबद्दल कोणीही आपल्याला प्रश्न करत नाही किंवा दंड सुद्धा आकारत नाहीत. या आपल्या निष्काळजीपणामुळे "घनकचरा व्यवस्थापन" करणे ही एक महत्वाची बाब झाली आहे.

महाराष्ट्रातील घनकचऱ्याचे व्यवस्थापन करणे ही एक गंभीर बाब !

"सगळीकडे चालवू स्वच्छता अभियान, तरचं होईल देश महान" !

आपल्याला आपल्या भारत देशाला स्वच्छ करण्यासाठी सर्वप्रथम आपण ज्या राज्यांमध्ये वास करतो तेथील परिसर स्वच्छ करावा लागेल; म्हणजेच सर्वात आधी महाराष्ट्रातील घनकचऱ्याचे व्यवस्थापन करावे लागेल.

महाराष्ट्रात एका वर्षात अंदाजे ९३ लाख टन कचरा तयार होतो; त्यापैकी ७५ लाख टन घनकचरा हा नगरपालिका क्षेत्रात तयार होतो. म्हणजेच वर्षाला सुमारे ९३००० मालगाडीचे डबे भरतील एवढा कचरा महाराष्ट्रात तयार होतो. या ९३००० डब्यापैकी ७५००० डबे शहरामधल्या घनकचऱ्याचेच असतात !! हा सर्व कचरा केवळ मुख्य करून शहरामध्ये तयार होणारा आहे. याशिवाय महाराष्ट्रात दरवर्षी इतर प्रकारचा घनकचराही निर्माण होतो.

महाराष्ट्र राज्यात दरवर्षी निर्माण होणारा इतर कचरा

	दरवर्षी लाख टन
१) घरगुती कचरा	७५
२) विषारी कचरा	१८
३) दवाखान्यामधला कचरा	०.११
४) इ-कचरा	०.२०
एकूण कचरा	९३.३१

महाराष्ट्रात दर दिवशी ४३.५ टन बायोमॅडिकल कचरा तयार होतो. देशामध्ये तयार होणाऱ्या एकूण बायोमॅडिकल कचऱ्यापैकी ६०% कचरा हा एकट्या महाराष्ट्रात तयार होतो. तसेच महाराष्ट्रात दरवर्षी एकूण १८ लाख टन विषारी कचरा तयार होतो. हा विषारी घनकचरा वेगवेगळ्या कारखान्यांमध्ये तयार होतो. उदा. रासायनिक, पेट्रोकेमिकल, कागद तयार करणारे, चामड्याचे व इतर कारखाने, जुने टि.व्ही. म्युझिक सिस्टीम, रेडिओ, मोबाईल, ओव्हन, प्रिंटर, बॅटऱ्या इत्यादी वस्तूंचा इलेक्ट्रॉनिक कचऱ्यामध्ये समावेश होतो.

भारतात ४.५० लाख टन इ-घनकचरा तयार होतो. यापैकी ७०% कचरा १० राज्यांमध्ये तयार होतो. या १० राज्यांमध्ये महाराष्ट्र राज्य प्रथम क्रमांकावर आहे. इ-घनकचऱ्याची विल्हेवाट लावणं ही दिवसेंदिवस एक गंभीर समस्या

बनत चालली आहे. शहरातून गोळा होणारा कचरा आपण भारतीय लांब कुठेतरी नेऊन पुरतो, किंवा फेकतो आणि तिथे कचऱ्याचे डोंगर रचतो. महाराष्ट्रातल्या कुठल्याही छोट्या-मोठ्या शहरांमध्ये प्रवेश करण्यापूर्वी दुरवर पसरलेले प्लास्टिक व कचऱ्याचे डोंगर आपल्याला पहायला मिळतात. वर्गीकरण न करता किंवा कुठलीही प्रक्रिया न करता अशाप्रकारे टाकलेला कचरा हा सर्वच दृष्टीने हानिकारक असतो.

असे म्हणतात - "उमटले ज्याचे दारी स्वच्छतेचे पाऊल, न लागे त्याचे घरी रोगराईची चाहुल".

महाराष्ट्रातील प्रत्येकाने वरील घोषवाक्याचे पाऊल आपल्या दारी उमटवले तर रोगराईची चाहुल लागणार नाही याची खात्री आपण नक्कीच करू शकतो. कारण वाढती लोकसंख्या, शहरीकरण, उंचावलेले राहणीमान, औद्योगिकरण, प्लास्टिकचा वाढता वापर यामुळे तयार होणाऱ्या कचऱ्याचे प्रमाण व प्रकार वाढत जातात आणि वेगवेगळ्या समस्या वाढत जातात. अस्वच्छता, आजार, प्रदुषण, सौंदर्यहानी आणि पर्यावरणाचे नुकसान असे अनेक प्रश्न त्यातूनच निर्माण होतात.

घनकचऱ्याची अगदी योग्य व सर्वात सोपी पद्धत वापरून विल्हेवाट लावायची असेल तर आपण तो कचरा तिथेच जाळून टाकतो व यामुळे पर्यावरणावर परिणाम होतो. उघड्यांवर घनकचरा तसेच विषारी कचरा जाळल्यामुळे अतिशय मोठ्या प्रमाणावर पर्यावरणाला हानी होते. तसेच सजीव सृष्टीलाही प्रदुषणाचा दणका बसतो; म्हणून घनकचरा जाळून त्याची विल्हावाट लावणे ही योग्य पद्धत मुळातच नाही.

कचऱ्याची विल्हेवाट लावतांना ओला घनकचरा, सुका घनकचरा इत्यादी याची वेगवेगळ्या स्वरूपात वर्गीकरण करणे अत्यावश्यक बाब आहे. कारण आपण माणसांनी कचऱ्यात प्लास्टिक टाकल्यामुळे प्राण्यांना किती हानी पोहचते याचे गांभीर्य आपल्याला माहिती असून देखील आपण पुन्हा पुन्हा तसेच करतो.

घन-कचऱ्याचे व्यवस्थापन करण्यास आपण कमी का पडतो ?

घन-कचऱ्याच्या समस्याला सामोरे जाण्यास जरी आपला कायदा सुयोग्य असला तरी खरी अडचण अंमलबजावणीची आहे. घनकचऱ्याच्या समस्याला आपण नागरिकही तितकेच जबाबदार आहोत हे आपण लक्षात घ्यायला हवे. आपण चॉकलेट, बिस्कीट खाऊन ते गुंडाळलेला कागद तिथेच फेकून देतो, पाणी पिऊन झाल्यावर बाटली गाडीच्या खिडकीतून भिरकाऊन तिथेच टाकून देतो. तसेच आपण निष्काळजीपणे कुठलीही वस्तुचा वापर झाल्यावर ती तिथेच टाकून देतो व विसरून जातो; या साध्या बाबी आपण लक्षात ठेवत नाही व मुलांना देखील शिस्त लावत नाही. आपला परिसर म्हणजे कचरा टाकण्याचे ठिकाण आहे असंच आपण समजतो व घनकचऱ्याचे व्यवस्थापन करण्यास कमी पडतो.

एके बाजूला आपण निर्माण करत असलेल्या कचऱ्याची नीट विल्हेवाट लावण्याची जबाबदारी घेत नाही. वाढती लोकसंख्या व आर्थिक परिस्थिती त्याच बरोबर रोजगार, व्यवस्थापन यंत्रणेची किंमत, इतर अशा अनेक गोष्टी घनकचरा निर्मितीवर परिणाम करतात. तसेच आपली जीवनशैली व गोष्टी उपभोगण्याची पद्धतच घनकचऱ्याचे प्रमाण वाढण्याला कारणीभूत ठरते. महाराष्ट्रात दर दिवशी २०,५०० टन हून अधिक घनकचरा निर्माण होतो. महाराष्ट्रातील घनकचऱ्याची समस्या ही फार मोठी आहे आणि ती दिवसेंदिवस वाढतच जाणार आहे. हा घनकचरा सर्वत्र पसरला असून तो संपूर्ण साफ करणे ही एकप्रकारचे आव्हान आहे.

असक्षम व्यवस्थापन आणि घनकचरा व्यवस्थापनाबद्दल असलेल्या बेफिकीर दृष्टीकोनाचा परिणाम पर्यावरणाच्या दर्जावर व सार्वजनिक स्वास्थ्यावर होतो आहे. नैसर्गिक साधनसंपत्तीचे नुकसान, खालावलेले पर्यावरण व सार्वजनिक स्वास्थ्याचा आजचा दर्जा धोकादायक परिस्थितीत दिसत आहे.

घनकचऱ्याचे व्यवस्थापन करण्यासाठी आपण काय करायला हवे ?

“गांधीजींचा एकच मंत्र स्वच्छ राहो भारतातील तंत्र”

गांधीजींच्या मंत्राला लक्षात घेत आपण घनकचऱ्याचे व्यवस्थापन करून संपूर्ण भारतातील स्वच्छतेचे तंत्र विकसीत करून गांधीजींची शेवटची इच्छा आपण पुर्ण करणे हे प्रत्येक भारतीयांचे कर्तव्य आहे. गांधीजी म्हणतात आज आपल्याला मिशलेल्या स्वातंत्र्यापेक्षाही जास्त महत्वाची बाब आहे ती म्हणजे आपला देश स्वच्छ ठेवणे. गांधीजींचे हे स्वप्न पुर्ण करण्यासाठी 'नव्या युगाचे पंतप्रधान मोदी यांनी "स्वच्छ भारत अभियान" या मोहीमेला सुरुवात केली. त्यानंतर या मोहीमेला भारतातील बऱ्याच लोकांनी पाठिंबा सुद्धा दिला आहे. आज घनकचऱ्याचे व्यवस्थापनाचे महत्त्व लक्षात घेता, भारतातील सर्वात प्रथम स्वच्छ शहर "इंदौर" (मध्यप्रदेश) या शहराचा क्रमांक येतो, दुसरा क्रमांक भोपाळ (मध्यप्रदेश) या शहराचा येतो.

“करूया स्वच्छतेचे नियोजन, आनंदी राहूया सर्वजण” !!

घनकचऱ्याचे व्यवस्थापन करण्यासाठी आपण सर्वांनी स्वतःच्या परिसरात निर्माण होणाऱ्या घनकचऱ्याचे प्रमाण कमीत कमी करण्याचा प्रयत्न करायलाच हवेत. त्यापुढची दुसरी पायरी म्हणजे आपण व्यवस्थापनासाठी कचऱ्याचे वर्गीकरण त्याच्या वेगवेगळ्या चार स्वरूपात करायला हवे. पहिला प्रकार म्हणजे पुन्हा प्रक्रिया करता येण्यासारखा (रिसायकलेबल) आहे, त्याच स्वरूपातील टाकाऊ पदार्थ पुन्हा वापरता येईल असा (रियुसेबल), विघटन होणारा (बायोडिग्रेडेबल), आणि प्रक्रिया न करता येण्याजोगा कचऱ्या असे वर्गीकरण केले असल्यास विघटन होणाऱ्या कचऱ्यावर प्रक्रिया करून त्याचा खत म्हणून वापर करण्याची जबाबदारीही आता नागरिकांचीच आहे, ती आपण उचलायला हवी.

प्रक्रिया करून पुन्हा वापरता येईल असा किंवा पुन्हा तसाच वापरता येईल असा कचऱ्या उचलणारे आणि तो संबंधीत यंत्रणेकडे पाठवून तो परत एकदा वापरात आणणारे अनेक उद्योग आज आपल्याकडे आहेत. आज आपल्या भारतात अनेक संस्था आहेत ज्या घनकचऱ्याचे विघटन करून वापरात येणारा कचऱ्या वेगळा करून पुन्हा वापरण्यासाठी त्यांची अंमलबजावणी करतात. अशा प्रकारच्या संस्थांना आपण भारतीयांनी प्रोत्साहन द्यायला हवे.

घनकचऱ्याचे व्यवस्थापन करण्यासाठी आपण कचऱ्या कमी करायला हवा, तो कमी करण्याचे सर्व मार्ग शोधायला हवे.

- टाकाऊ गोष्टींचा जास्तीत जास्त वापर आणि त्यावर पुनःप्रक्रिया करायला हवी.
- घराघरातील कचऱ्याचा बंदोबस्त आपण कसा करावा या संदर्भातील माहिती आपण निवासी स्थानातील लोकांना द्यायला हवी व कचऱ्याची विल्हेवाट लावायला हवी.
- कचऱ्या व्यवस्थापन करण्यास कर्मचाऱ्यांना सुरक्षित व आरोग्याला हितकारक अशा सुविधा पुरवायला हव्यात.
- घनकचऱ्या व्यवस्थापनासाठी आधुनिक व नाविन्यपूर्ण तंत्रज्ञानाचा स्वीकार करायला हवे.

महत्वाच्या कल्पना :- १) आपण कचऱ्यातून वीज निर्मिती, खत निर्मिती या उद्योगांना चालना देऊ शकतो.

२) खाजगी कंपनी निर्माण करूया; कचऱ्या व्यवस्थापनासाठी व त्यातून घनकचऱ्याचे योग्य वापर करू शकतो.

आम्ही आता घेतलाय निर्णय भारताला स्वच्छ करणार पुर्ण !!

कु. अंकिता तायडे

एम.एस्सी. भाग-१ (गणित)

कचरा व्यवस्थापन काळाची गरज....

भारत हा एक विकसनशील देश आहे. जगातील सर्वात मोठी समस्या म्हणजे अस्वच्छता आहे. भारत जर स्वच्छ असेल, तरच भारत स्वस्थ होऊ शकेल. त्यासाठी प्रत्येकाने संकल्प केला पाहिजे, मी माझा परिसर, माझे गाव, माझा देश स्वच्छ ठेवीन. अशी जर प्रत्येकाने संकल्पना केली व ती आत्मसात केली, तर भारताला स्वच्छ होण्यापासून कोणतीही ताकद अडवू शकत नाही.

आज आपण बघतो की, आपल्या घरात, कारखान्यात कुठल्या ना कुठल्या प्रकारचे सांडपाणी, केरकचरा, प्लास्टीकच्या पिशव्या व बाटल्या, तसेच अनेक टाकाऊ पदार्थ निर्माण होतात व ते आपण उघड्यावर टाकतो. त्यामुळे रोगजंतू निर्माण होतात. त्यामुळे आपल्याला विविध आजार जडतात. तसेच खेडेगावात किंवा झोपडपट्टीतील काही लोक उघड्यावर शौचास बसतात. त्यामुळे आपल्याला काविळ, हगवण, कॉलरा, डायरिया, पिलीया इत्यादी प्रकारचे रोग होतात. घराबाहेर शौचास बसण्यापेक्षा घरात एखादे शौचालय बांधावे व यापर करावा. या विष्टेचा गोबरगॅससाठी सुद्धा वापर करू शकतो. गुजरातमध्ये श्री. ईश्वरभाई पटेल यांनी २,००,००० पेक्षा जास्त शौचकूपांची निर्मिती केली आहे. स्वच्छतेसाठी झिजणाऱ्या अण्णा हजारे यांसारख्या माणसांची आपल्याला गरज आहे. कमी खर्चात शौचकूप बांधणे हे श्री. ईश्वरभाई यांच्या आयुष्याचे व्रत आहे. अशाप्रकारचे व्रत सर्व लोकांची चळवळ होणे आवश्यक आहे. लोकांमध्ये स्वच्छतेबद्दल जाणीव व जागती करून प्रत्यक्षात करता येतील, असे उपाय केले पाहिजेत.

प्रत्येक कारखान्यात, घरात टाकाऊ पदार्थ निघतच असतात. त्या कचऱ्याची योग्य विल्हेवाट लागलीच पाहिजे. त्यासाठी विविध प्रकारचे नियोजन केले पाहिजे. कचऱ्याची विभागणी केली पाहिजे.

विघटनशील कचरा - असा कचरा की ज्याचे विघटन होऊ शकेल. त्या कचऱ्याचा जैविक सेंद्रिय खत म्हणून शेतीत उपयोग होऊ शकेल.

घातक कचरा :- असा कचरा की जो अत्यंत हानीकारक आहे. उदा. रासायनिक बाटल्या, विषारी औषधे, सुया, बँडेज, रवॅब, प्लॅस्टर, रुग्णालयातील कचरा, इत्यादी.

अ-विघटनशील कचरा :- असा कचरा की ज्याचे विघटन निसर्गात होऊ शकत नाही. उदा. प्लास्टीक. त्यासाठी त्या पदार्थाचे पुनरुत्पादन किंवा रिसायकलिंग करून त्याचे पुन्हा उत्पादन करू शकतो.

वाढत्या कचऱ्यामुळे जमिनीची अनुपलब्धता, जमिनीची उत्पादका कमी होते. जैविविधतेचा न्हास होतो, आरोग्यावर अनिष्ट परिणाम होतो. वायुरूप घातक पदार्थांमुळे श्वसनमार्गात अडचणी निर्माण होतात. अशा प्रकारे अनेक दुष्परिणाम होतात.

आपण स्वच्छ राहावे, आपले कपडे स्वच्छ असावे, आपले घर स्वच्छ असावे असे सर्वांनाच वाटते. त्याचप्रमाणे आपला परिसरही स्वच्छ राहावा, यासाठी आपण सर्वांनीच काळजी घेतली पाहिजे. परिसर अस्वच्छ असला तर रोगजंतुची वाढ होते व रोगांचा फैलाव होतो. याउलट स्वच्छ परिसर सर्वांनाच आवडतो. खरच भारत देश स्वच्छ असेल तरच भारत स्वस्थ होऊ शकतो.

रूपेश पचोरी

एम.एस्सी. भाग-१ (सुक्ष्मजीवशास्त्र)

ई कचरा व्यवस्थापन

देशामध्ये सर्वत्र मोठ्या उत्साहात चालत असलेल्या "स्वच्छ भारत अभियानामुळे" देशभरात जनजागृती निर्माण झाली. पण प्रश्न असा आहे की "स्वच्छ भारत अभियान" हे फक्त केर-कचरा व सांडपाण्यापुरतेच मर्यादित आहे का ? तर नाही, ही एक व्यापक योजना आहे. जी देशाला व देशाच्या पर्यावरणाला घातक असलेल्या प्रत्येक घटकाशी निगडीत आहे व देशाच्या सुदृढ भविष्याकडे मोठी वाटचाल आहे. त्यामुळे 'ई कचरा' ही एक ज्वलंत समस्या देशासमोर उभी आहे. मग नेमक 'ई कचरा' म्हणजे काय ?

ई कचरा म्हणजे आपल्या घरातील दैनंदिन वापरण्यात येणाऱ्या तांत्रिक उपकरणे यांचा वापर न झाल्यामुळे किंवा यात्रिकी बिघाडामुळे ते वर्षानुवर्षे पडलेले असतात. कालांतराने त्यांचे रूपांतर कचऱ्याच्या ढिगामध्ये होते यालाच ई कचरा म्हणतात. जसं जसं नविन तंत्रज्ञान बाजारात येत, तसं तसं अर्थातच वापरात आलेल तंत्रज्ञान जुना होत जात. आपल्या मोबाईलच्या हॅन्डसेटचं उदाहरण बघा. हा हॅन्डसेट जेव्हा आपण बघतो, विकत घेतो व काही महिन्यांनंतर नव्याने बाजारात आलेली हॅन्डसेट घेण्याकडे मन वळतं, हेच टि.व्ही. सेट, कम्प्युटर यांच्या बाबतीत घडते. हे नवनविन तंत्रज्ञान आपल्याला आकर्षित करते. मग जे न वापरत असलेल्या वस्तु ह्या ई कचऱ्यामध्ये मोडतात.

नविन तंत्रज्ञानाची ओढ सगळ्यांनाच असल्यामुळे जुन्या इलेक्ट्रॉनिक वस्तुंना मागणी नाही. काही वेळा स्वस्तातल्या इलेक्ट्रॉनिक वस्तु खरेदी करण्याकडे काही लोकांचा कल असतो. या वस्तु बेभरवश्याच्या असतात. म्हणजे त्या चालू असल्या तर खुप दिवस आपल्याला साथ देतात, पण काही वेळा फारशा चालत नाही. इलेक्ट्रॉनिक घड्याळे, कॅल्क्युलेटर्स, खेळणी अशा प्रकारच्या वस्तु मग फेकून दिल्या जातात. म्हणून मग इलेक्ट्रॉनिक वस्तुमुळे निर्माण होणाऱ्या कचऱ्याला 'ई कचरा' असं सोपं नाव दिलं.

या प्रकारचा कचरा धोकादायक असतो. कारण त्यामध्ये शिसे, वेरिलिअम, पारा कॅडमिअम अशा अपायकारक जड धातुंचा समावेश असतो. या कचऱ्याची हाताळणी आणि विल्हेवाट करणे ही गंभीर समस्या बनत चालली आहे. भारतात दिवसाला सरासरी ५ टन ई कचरा निर्माण होतो. २०१२ या वर्षी ८ लाख टन ई कचरा निर्माण झाला होता असे आकडेवारी सांगते. आता तर हा 'ई कचरा' कित्येक पटीने वाढला असल्याची शक्यता आहे. हा ई कचरा जमिनीत गाडणे किंवा जाळणे हे पर्यावरणाच्या आणि आरोग्याच्या दृष्टीने अत्यंत घातक ठरते. उदा. विजेच्या उपकरणांसाठी वापरलेल्या तारांमधुन तांबे मिळवण्यासाठी या तारा जाळल्या जातात, जाळल्यामुळे तारांवर असलेलं पॉलिथिनचं विद्युत्तरोधक आवरण जळतं आणि तांब्याची तार मिळते. तारांमधुन तांबे मिळवण्यासाठी ही पद्धती सर्रास वापरली जाते. पण त्यामुळे मोठ्या प्रमाणावर हवा प्रदुषण होतं. म्हणून आज ई कचरा या समस्येवर तोडगा काढण्याची वेळ आलेली आहे. मग ई कचरा व्यवस्थापनाची जबाबदारी कुणाची ?

ई-कचरा व्यवस्थापनाची जबाबदारी ही उत्पादनकर्त्याची आणि या वस्तु वापरणाऱ्याने करण्याची आहे. भारतातील काही कंपन्यांनी शास्त्रोक्त पद्धतीने ई-कचरा व्यवस्थापन करण्यास सुरवात केली आहे? पण तरीसुद्धा ई-कचरा गंभीर समस्या बनत आहे. या समस्येवर तोडगा काढण्यासाठी मोठ्या प्रमाणात जनजागृती करण्याची गरज आहे. तंत्रज्ञानाच्या या युगात आपण काळाप्रमाणे चाललो नाही तर मागे पडू. तंत्रज्ञानाचा वापर प्रत्येकाने केला पाहिजे, यात दुमत नाही ! पण हा वापर अधिक डोळसपणे आणि जागरूकतेने करण्याची गरज आहे हे नक्की. त्याचप्रमाणे इलेक्ट्रॉनिक वस्तुंच्या संदर्भात Reduce, Reuse आणि Recycle च्या त्रिसुत्रीची अंमलबजावणी करणं आवश्यक आहे व तीच आज काळाची गरज आहे. मग चला करूया देशाच्या सुदृढ भविष्याकडे वाटचाल....

कु. काजल जवके
बी.एस्सी. भाग-३

घन कचरा व्यवस्थापन

घनकचरा व्यवस्थापनासाठी काहीतरी युक्ती लढवा ।

त्यातूनच आपले भविष्य सुंदर घडवा ॥

मी लहान होते तेव्हा माझ्या मनात अनेक विचार येत होते. आपल्याला तर माहितच आहे की, जे प्रश्न मोठ्यांना पडत नाहीत ते लहानांच्या मनात घर करत असतात. त्या प्रश्नांचे उत्तर मिळविण्यासाठी ते मोठ्यांचा सहारा घेतात. ते त्या उत्तराची वाट बघतच असतात. मोठ्यांचे उत्तरे कसे असतात याची आपल्याला कल्पना तर आहेच. लहान असतांना मला सुद्धा एक प्रश्न पडला. कदाचित हा प्रश्न तुमच्या डोक्यातही निर्माण झाला असेल. माझा तो प्रश्न असा की, दैनंदिन वापरात आपण किती बरे वस्तु वापरतो काम झाल्यानंतर फेकून देतो. जिथे तिथे सगळीकडे कचऱ्याचे ढिगच ढिग दिसतात. या कचऱ्यात आपण आपले अस्तित्वच तर हरवून बसणार नाही? कचरा कमी करण्यासाठी काय करावे? पण मलातर मोठ्यापणी हे प्रश्न उतरण्याची शक्यता वाटत आहे, परंतु "घन कचरा व्यवस्थापन" त्या दुसऱ्या प्रश्नाचे उत्तर घेवून आले आहे.

मानवाने पॉलीथीनचा खूप वापर केला आहे. इतका केला आहे की त्याने कवींसाठी निसर्गच नाही ठेवला. भविष्यात कवींना त्यांच्या कवितेत पृथ्वीला हिरवा शालु ऐवजी पॉलीथीनचा शालु या शब्दांची संभावना वाटू लागली. आपल्या देशाची ओळख ही कृषीमध्ये आहे. भारत देश हा कृषीप्रधान देश म्हटल्या जाते. परंतु या कलयुगात पॉलीथीनचा दुष्परिणाम कृषिवर होत आहे. पॉलीथीनच्या जागेवर पीक येत नसल्याने जमिनीची सुपीकता व उत्पादकता कमी झालेली दिसून येते. पॉलीथीनसारख्या प्लास्टीकवर सरकारने बंदी आणुनही पॉलीथीनचा वापर सुरुच दिसतोय. काही लोक कचरा जाळून तसेच पॉलीथीन कुजत नसल्याने त्याला सुद्धा जाळतात. परंतु पॉलीथीनसारख्या वस्तु जाळल्याने कार्बन डायऑक्साईडची निर्मिती होवून पृथ्वीला लाभलेले ओझोनचे संरक्षण कवचास धोखा निर्माण झाला आहे. ओझोनच्या थरास छिद्रे पडल्याने काही देशात त्वचेच्या कॅन्सरचे प्रमाण खूप वाढलेले दिसून येत आहे. अशी भयंकर परिस्थिती आपल्याही देशावर उद्भवणार. आपल्याला आपल्या कर्मांचे फळ तर कधी ना कधी मिळणारच आहे आणि ते फळ कडू हवे की गोड हे सुद्धा आपल्याच हातात आहे, त्यासाठी पुढीलप्रमाणे.....

दाहिदिशांनी पृथ्वीवरती आले पॉलीथीनसारख्या दुषित कचऱ्याचे राज्य ।

त्याची विल्हेवाट लावा नाहीतर, संकटासाठी व्हा सज्ज ॥

निसर्गरम्य अशा सौंदर्यवान पृथ्वीचे नैसर्गिक सौंदर्य कमी होण्याच्या मार्गावर आहे. याला एक घटक कारणीभूत आहे तो म्हणजे घनकचरा. हा घनकचरा अनेक वाईट आपल्या अधपतनास जबाबदार आहे. यातून विषारी वायु बाहेर पडतो. आपल्याला तर माहितच आहे जास्तीत जास्त आजार हे हवेमार्फत होतात. म्हणजेच आरोग्य आपले बिघडत आहे.

आपल्या महान भारतामध्ये स्वच्छतेचे महान पुजारी होवून गेले परंतु त्यांच्या पाऊलखुणा मात्र आपल्यासाठी मागे ठेवून गेले. त्यांच्या पाऊलावर आपल्याला पाऊल ठेवायचे आहे. त्यांच्या हातातील स्वच्छतेची मशाल आपल्या हाती घेवून जगाला प्रकाशमान करायचे आहे. संत गाडगे बाबांनी लोकांना स्वच्छतेचे महत्व पटवण्यासाठी त्यांनी दिवसभर हाती झाडु घेतला व रस्त्यावरील गावातली दुर्गंधी हटविली. ऐवढेच करून थांबले नाहीत तर लोकांच्या मनातील दुर्गंधी हटविण्यासाठी रात्ररात्रे गावोगावी सुविचार पसरवले. आपण संत गाडगे महाराजांसारखी स्वच्छता पुर्ण देशात ठेवू शकत नाही परंतु आपल्यामुळे दुर्गंधी होवू नये याची काळजी तर घेवूच शकतो. आपण आपल्याकडून जेवढी स्वच्छता ठेवल्या जावू शकते तेवढी ठेवून आपण आपल्याच भविष्यातील पीढींसाठी सुंदर भविष्य निर्माण करू शकतो.

महात्मा गांधीजी यांनी सुद्धा त्यांच्या विचारातून तसेच कार्यातून स्वच्छ सुंदर बनविले. महात्मा गांधीजींनी अहोरात्र

परिश्रम करून भारतभूमीला स्वच्छ बनविण्यासाठी अनेक मोहिम सुरु केल्या. म. गांधीजींनी "स्वच्छ भारत, सुंदर भारत, स्वस्थ भारत" असे उज्ज्वल स्वप्न पाहिले व त्या स्वप्नाची पूर्ती करण्यासाठी त्यांनी खूप मेहनत घेतली व त्यांच्या याच मोहिमेला त्यांच्या या स्वप्नाला साक्षात उतरविण्यासाठी माननीय प्रधानमंत्री नरेंद्र मोदीसाहेब यांनी स्वच्छतेची मोहिम सुरु केली आहे. मोदीजींनी गांधीजींच्या जयंतीच्या दिवसापासून भारत स्वच्छ अभियान सुरु केले व त्या दिवशी स्वच्छतेची पंधरवाडा काढतात.

ज्या देशामध्ये गंगा नदी वाहते पवित्र ।

आता गरज वाटते, चालवण्याचे घनकचरा व्यवस्थापनाचे सत्र ॥

आपल्या भारत देशात गायीला माता म्हटले जाते. मोठमोठे गौसंघ स्थापन करण्यात आलेले आहेत. त्या देशात कित्येक गायी मृत्युमुखी पडत आहेत, ते फक्त आणि फक्त मानवाच्याच कर्तृत्वामुळे. याला तर सरळ सरळ गौहत्याच म्हटल्यास हरकत नाही याचे प्रमाण शहरांमध्ये तर जास्तच दिसून येते. त्याचे कारण म्हणजे लोकं पॉलीथीनचा वापर झाला की रस्त्यावर कोठेही फेकून देतात. कोणत्या पॉलीथीनमध्ये खाद्यपदार्थ सुद्धा असू शकतात. शहरात तर प्लास्टीक कचरा यांचे ढिगंढिग दिसतात व तेथेच असंख्येने गायी पॉलीथीनसुद्धा खावून घेतात. त्यांच्या पोटात प्लास्टीक जमा होवून गायी मृत्यु पावतात. आपल्याला जसे कोठेही फिरण्याचा अधिकार आहे तसाच त्या गायींना सुद्धा सर्वत्र फिरण्याचे स्वातंत्र्य आहे. परंतु कोणालाही कोठेही कचरा करण्याचा "अधिकार" नाही. हे लक्षात ठेवले पाहिजे. ओला कचरा, सुखा कचरा आणि घनकचरा व्यवस्थापनासाठी सरकारने कचरा गाडींची व्यवस्था प्रत्येक कानाकोपऱ्यापर्यंत करून दिली आहे. तसेच कचरा पेटींची व्यवस्था सुद्धा केलेली आहे.

प्रत्येकाला "फायदा" म्हटले की लवकर लक्षात येते तर घनकचरा व्यवस्थापनामध्ये तीन महत्वाच्या प्रक्रिया आहेत. १) कचरा कमी करणे २) पुर्नवापर ३) पुनचक्रीकरण. यामधून उर्जा निर्मिती होते. तुम्हाला तर माहितच आहे आपल्या देशात पाण्याच्या कमतरतेमुळे उर्जा निर्मिती पेक्षा उर्जा खर्च जास्त प्रमाणात दिसून येते. त्यामुळे हा खूप मोठा फायदा आहे. तसेच "जैववायु" निर्मिती ही सेंद्रिय कचऱ्यापासून होते.

आधी तर आपल्याला घनकचऱ्याचे व्यवस्थापन म्हणजे काय ? हे कळायला हवे. मानव विविध कृतीतून अनेक वस्तु फेकून देतो तेही टाकाऊ पदार्थ म्हणून. परंतु टाकाऊ पदार्थ सुद्धा खूप मोल्यवान होवू शकतात. या टाकाऊ पदार्थांवर थोड्या प्रक्रिया करून या टाकाऊ वस्तुंपासून नविन वस्तु तयार करू शकतो. यामुळे धनाची व मालाची बचत होते व त्यातूनच स्वच्छतेचे सुंदर कार्यही घडते. कोणतेही कार्य हे एकतेने लवकर होते.

आपल्यावर अशी वेळ आली आहे की, पंतप्रधान आपल्याला स्वच्छतेचे महत्व सांगताहेत व नद्यांना आपण पवित्र मानतो त्या नद्यांवर मोदींना गंगा निर्मल, गोदावरी निर्मल अशा योजना कराव्या लागतात. १८ वर्षांनंतर आपल्याला मतदानाचा अधिकार मिळतो कारण त्यांना तेव्हा अमूल्य मतांची समज आलेली असते. तर मग घनकचरा व्यवस्थापनाची गरज व महत्व तर समजणारच. आपण म्हणतो त्या देशात कचरा केल्यास फाईन भरावी लागते. म्हणून तर तो देश खूप स्वच्छ व सुंदर आहे. घनकचरा व्यवस्थापनाने पुढे असे होणार की, लोकं म्हणतील भारत देश असा आहे की तेथे फाईन न भरता भारत देश स्वच्छ व सुंदर आहे. "घनकचरा व्यवस्थापन करणे" हे कलयुगाची गरज बनली आहे. हे व्यवस्थापन आपल्या सर्वांचे व पुढील पीढीपीढींचे भविष्य व्यवस्थापित व स्वच्छ, स्वस्थ, सुंदर करण्यासाठी आहे.

घनकचरा व्यवस्थापनामध्ये देवून योगदान लहान,

घडवू भारत देश स्वस्थ, स्वच्छ, सुंदर व महान ॥

कु. आरती गोळे

बी.एससी. भाग-१

घन कचरा निर्मिती व व्यवस्थापन

स्वच्छ भारत का इरादा,
इरादा कर लिया हमने,
देश से अपने ये वादा,
ये वादा कर लिया हमने।

आपल्या परिसरात रोज येणाऱ्या कचरा घंटागाड्यातून रोज हे गीत आपल्या कानावर पडत असते. कदाचित हे गीत आपल्या तोंडपाठही असेल पण कधी या गीतातील शब्दांवर आपण लक्ष केंद्रित केले आहे का ? किती नेमक्या, मोजक्या आणि सुंदर शब्दात या मोहिमेचा उद्देश मांडला आहे या गीतात.

२ ऑक्टोबर २०१९ ला महात्मा गांधींची १५० वी जयंती या दिनाचे औचित्य साधून मा. पंतप्रधान श्री. नरेंद्र मोदींनी २ ऑक्टोबर २०१४ ला स्वतः हातात झाडू घेऊन स्वच्छ भारत मोहिमेला हिरवा झेंडा दाखवला. या मोहिमेचा उद्देश २ ऑक्टोबर २०१९ पर्यंत भारताला स्वच्छ करण्याचा आहे आणि याहून चांगली श्रद्धांजली गांधींजींसाठी दूसरी तरी काय असू शकते असे पंतप्रधानांनी त्यांच्या भाषणातून जाहीर केले. या वर्षी या मोहिमेला पाच वर्ष पूर्ण होतील पण या मोहिमेचा उद्देश पूर्ण झाला की नाही ? हा प्रश्न मात्र कायम राहतो.

'ना गंदगी करेगे, ना करने देंगे' असा नारा देत खुद्द पंतप्रधानांनी हातात झाडू घेऊन मंदीर मार्ग पोलिस स्टेशन, दिल्ली जवळ स्वच्छता केली. आता स्वतः पंतप्रधानांनी हातात झाडू घेऊन स्वच्छता केली म्हटल्यावर इतर राजकीय नेते, त्यांचे कार्यकर्ते, अधिकारी, कर्मचारी, विविध संघटना, विद्यार्थी हे ही हातात झाडू घेऊन रस्त्यावर उतरले. या मोहिमेअंतर्गत विविध कार्यक्रमांचे आयोजन झाले पण बऱ्याचदा या कार्यक्रमांचा उद्देश फक्त वर्तमानपत्रात बातमी आणि फोटो छापून येण्यापर्यंत मर्यादित राहिला.

नामवंत खेळाडू, कलाकार मंडळीकडून स्वच्छता मोहिमेचा प्रचार - प्रसार करण्यात आला. कचरा कोंडी सोडवण्याच्या उद्देशातून शासनकडून घनकचरा व्यवस्थापनाच्या संदर्भात सातत्याने महापालिका, नगरपालिकांना दिशानिर्देश दिले जात असले तरी प्रत्यक्षात टोस निर्णयांच्या अंमलबजावणी अभावी कचऱ्याची समस्या कायम असल्याचे चित्र आहे.

'ऑगस्ट क्रांती मोहिमे' नंतर आता शासनाने राज्यस्तरीय नियंत्रण समितीचे गठन केले असून यामध्ये शहर विकास विभागाचे सचिव, केंद्रिय प्रदूषण नियंत्रण मंडळासह पर्यावरण विभागाच्या सचिवांचा समावेश करण्यात आला आहे. दुसरीकडे 'सॉलीड वेस्ट टू एनर्जी' प्रकल्पासाठी ५०० टन कचऱ्याची अट पाहता 'ड' वर्ग महापालिकांसमोर कचरा जमा करण्याचे आव्हान निर्माण झाले आहे. स्वच्छ महाराष्ट्र अभियान अंतर्गत राज्य शासनाने शहरात निर्माण होणाऱ्या कचऱ्याचे ओला व सुका असे विलगीकरण करण्यासाठी महापालिकांना १ मे २०१७ पासून 'कचरा लाख मोलाचा' मोहीम राबविण्याचे निर्देश दिले होते. एवढे सगळे करूनही बऱ्याच ठिकाणी परिस्थिती जैसे थे अशीच असली तरीही देवगुराडिया, इंदूर येथील ट्रेचिंग ग्राऊंडवर कचऱ्यावर पुनर्प्रक्रिया केली गेली. जुन्या ११ लाख टन कचऱ्यातून १.६० लाख टन मलबा निघाला. एक लाखाहून अधिक टन प्लास्टिक व अन्य साहित्य कचरावेचक व मटेरियल रिकव्हरी फॅसिलिटी सिस्टिमद्वारे पुनर्प्रक्रिया केली व आज तेथे प्री-वेडिंग शूट केले जाते. स्वच्छता सर्वेक्षण २०१८ च्या अहवालानुसार मध्यप्रदेश मधील इंदूर प्रथम तर भोपाळ हे शहर दुसऱ्या स्थानावर आहे.

मेघालय मधील मौलिननौग (Mawlynnong) हे फक्त भारतातीलच नव्हे तर संपूर्ण एशियामधील सर्वात स्वच्छ गाव आहे. तर एशिया मधील सर्वात अस्वच्छ पाच शहरांच्या यादीत मुंबई आणि दिल्लीचा अनुक्रमे तिसरा व चौथा क्रमांक लागतो. सर्वात स्वच्छ आणि अस्वच्छ ही दोन्ही ठिकाणे भारतातील असणे हा विरोधाभासी योगायोग आहे.

शहरांमधील कचरा हा गुंतागुंतीचा व गंभीर प्रश्न बनत चालला आहे. आपल्या भोगवादी समाजाकडून रोज प्रचंड प्रमाणात घनकचरा टाकला जातो. संपूर्ण जगात प्रतिवर्षी सुमारे १०० कोटी टन कचरा निर्माण होत असावा असा अंदाज आहे. हा सगळा कचरा एके ठिकाणी रचला तर मारुंट एव्हरेस्ट इतक्या उंचीचा पर्वत उभा राहिल. शहरात निर्माण होणाऱ्या कचऱ्याच्या अभ्यास करणे व कचऱ्याचे व्यवस्थापन व विल्हेवाट कशाप्रमाणे करता येईल याचा अभ्यास करणे आवश्यक आहे. कायद्याने एखाद्या सरकारी खात्याला जबाबदारी आणि अधिकार प्रदान केले गेले की जबाबदारी झटकायची आणि अधिकारांचा फटका बेजबाबदारपणे ओढायला सुरुवात करायची असा आपला प्रघात आहे. आपल्या घरता कचरा होऊ नये म्हणून काही लोक दुसऱ्यांच्या अंगणात कचरा फेकतात. हे चित्र बरोबर नाही. हे आपल्यासाठी नवीन नाही, परंतु दुर्दैवाची बाब म्हणजे जगातिक पातळीवरही हेच चित्र दिसत आहे. त्यांचे अंगण स्वच्छ रहावे म्हणून विकसित देशांतील कचरा अविकसित आणि विकसनशील देशात पाठवला जातो. आम्ही तो कचऱ्याचा ढीग (मुखपणाने) आयात करतो हे विशेष.

घन कचऱ्याची निर्मिती घराघरातून होत असल्याने गोळा होणाऱ्या घनकचऱ्याचे प्रमाण वा त्याचा दर्जा यावर नियंत्रण ठेवता येत नाही. परिणामी त्याची साठवण, वाहतूक व्यवस्था वा त्यावरील प्रक्रिया यांचे डिझाईन करण्यासाठी सांख्यिकी पद्धतींचा वापर करावा लागतो. साहजिकच ही व्यवस्था सर्व परिस्थितीत कार्यक्षम राहण्यासाठी अधिक लवचिक व सुसज्ज ठेवणे आवश्यक ठरते. यासाठी लागणारी साधन सामुग्री, मनुष्यबळ व आर्थिक तरतूद बहुतेक नगरपालिकांच्या आवाक्याबाहेरची गोष्ट असते. घन कचरा स्वतःहून वाहून जात नाही तो उचलून न्यावा लागतो. त्यामुळे प्रदूषण त्या जागीच मर्यादित राहत असले तरी न वापरातील सर्व जागा हळूहळू कचऱ्याने व्यापला जातात आणि प्रत्यक्ष कृतीशिवाय स्वच्छता होत नाही. केवळ कायदे करून वा नगरपालिकेची, महानगरपालिकेची कार्यक्षमता वाढवून या समस्येचे निराकरण करता येणार नाही. याउलट लोकांची मानसिकता बदलली आणि त्यांनी जाणीवपूर्वक यात सहभाग घेतला तर एरवी अशक्य व खर्चिक वाटणारी ही योजना अत्यंत कमी खर्चात प्रभावीपणे यशस्वीपणे राबविता येईल. घनकचरा व्यवस्थापनासाठी नविन तंत्रज्ञान वापरणे ही काळाची गरज बनलेली आहे. घन कचरा व्यवस्थापनाची समस्या जर मार्गी लावायची असेल तर जुना मंत्र व नवीन तंत्र याची सांगळ घालायला हवी. तेव्हाच 'स्वच्छ भारत अभियाना'च्या गीतातील

स्वप्न गांधीजी का अब साकार करना है,
स्वच्छता का देश में अब त्यौहार करना है,
खुद से ही करनी होगी शुरुआत,
बनाये स्वच्छ भारत साथ साथ ।
एक पवित्र से हवा बहेगी,
उज्ज्वल - उज्ज्वल हो भारत ।
कोना - कोना निर्मल होगा,
विश्व कहेगा जय भारत ।
या ओळी सार्थक ठरतील.

कु. केतकी क्षीरसागर
बी.एस्सी. भाग-३

घन कचरा व्यवस्थापन - काळाजी गरज

माणूस जन्माला येतो, एका मागणं एक वर्ष जातं आणि तो या जगात, समाजात मोठा होतो. या दरम्यान काही नैतिक मूल्ये अंगी येतात. परंतु ही नैतिकता प्रत्येकाच्याच पचनी पडत नाही. माणसाच्या या लहानाचं मोठ होण्यात फरक असतो, जिच्या अंगाखांद्यावर खेळून हा लहानाचा मोठा होतो, त्याच आईला या मेदिनीला अर्थातच या मातेसमान पृथ्वीला तो विसरतो. अशी आई, जिचं रक्ताचं नातं नसतं तरी ती तिच्या बाळावरती, 'पोटी भार वाहे । त्याचे सर्वस्व ही साहे' अशा प्रकारे प्रेम करते, त्या भूमातेला हा दृष्ट विसरत चाललायं.

पुराणकथे, महाकाव्यांत बघितलं तर माणूस निसर्गालाच पुजायचा. या पृथ्वीतलावरील प्रत्येक त्याला पूज्यमान होती.

'समुद्रे वसते देवी । पर्वतस्थान मंडले ।
विष्णुपत्नी नमोस्तुभ्यम् । पादस्पर्श दामस्वमे ॥

पृथ्वीला विष्णुपत्नी म्हटलंयं नि आपल्या चरणाचा या मातेला स्पर्श होतो म्हणून क्षमा मागतोय, हा पूर्वीचा मनुष्य ! काय पवित्र नि उदात्त स्थान आहे चितं आपल्या जीवनात. परंतु जगभर, हल्ली कृतघ्नतेचा पसारा मांडलाय नि आपल्यातलेच आपण हिच्या कृतज्ञतेला विसरतोय, ही शरमेची बाब आहे ! एखादा आपल्याला त्याचं सर्वस्व अर्पण करतोय, आपण फक्त त्याला उपभोगण्याचं बघतोय, तर हे अट्टल बदमाशाचं लक्षण आहे !

अहो, किती हा त्रास या भूमातेला. अगदी प्रदूषण, तापमान वाढ, पर्यावरणाचा न्हास, लोकसंख्या वाढ, वृक्षतोड, पाण्याची कमतरता, ओसाड प्रदेश, बंद नद्या, जमनीची नापीकता इतक्या नि अशाचं अगणित समस्या निर्माण झाल्यात. या सगळ्यात अजून एक भंगीर विषय वर येऊ पाहत आहे, तो म्हणजे वाढता घन कचरा. याचं व्यवस्थापन अत्यंत गरजेचं झालयं.

घनकचरा म्हणजे रोजच्या वापरातून उरलेल्या निरूपयोगी वस्तूंचा साठा, आपली घरे, कार्यालये, दुकाने, भाजी मंड्या, उपहार गृहे, सार्वजनिक संस्था, औद्योगिक संस्था, रुग्णालये, शेती, बांधकामे या सर्व ठिकाणांहून अनेक वेगवेगळ्या प्रकारचा कचरा रोजच्या रोज तयार होत असतो. आपण आपल्या घरातल्या टाकाऊ वस्तु कचरा सरळ घराबाहेर फेकून देतो. सोसायटीच्या आवारात, सार्वजनिक रस्त्यांवर, नाल्यांमध्ये, समुद्र-नद्यांमध्ये अगदी कुठेही आपण कचरा फेकतो. याबद्दल आपल्याला कोणी प्रश्न विचारत नाही किंवा दंडही करत नाही.

आपण जसजशी भौतिक करतो तसतसं आपलं वस्तू वापरण्याचं प्रमाण वाढतं आणि पर्यायाने आपण निर्माण केलेल्या कचऱ्याचे प्रमाण आणि प्रकारही अधिक वाढतात. पण, तो कचरा साठवून ठेवल्याने नागरीकांवर व पर्यावरणावर दुष्परिणाम होतो. त्यामुळे कचरा हा योग्य पद्धतीने निकाली काढता गेला पाहिजे. सर्व कचरा हानिकारक नसतो. कचऱ्याचे अनेक प्रकार असतात. त्यातील मुख्य दोन प्रकार म्हणजे सेंद्रिय आणि असेंद्रिय. असेंद्रिय कचरा अनेक पद्धतीने पुन्हा वापरण्यासाठी उपयोगात आणला जाऊ शकतो. सेंद्रिय कचरा, प्रत्येक माणसाला उपयोगात आणणे सहज शक्य आहे. पण या सगळ्यासाठी इच्छाशक्ति असणं अत्यावश्यक आहे. कचऱ्याकडे बघण्याचा आपला दृष्टीकोन बदलायला हवा. कचरा ही समस्या म्हणून न पाहता त्याकडे एक संधी म्हणून पाहायला हवे.

कचरा हा दुसऱ्या कोणाची तरी समस्या आहे असे म्हणून चालणार नाही. आपण निर्माण करणाऱ्या कचऱ्यांचे व्यवस्थापन करण्यासाठी सामाजिक जागृती, राजकीय इच्छाशक्ति व प्रत्येक नागरिकाचा सहभाग अत्यंत महत्त्वाचा आहे.

सर्वप्रथम म्हणजे कचरा करण्याचे प्रमाण मुळात कमी करता येते का हे पाहायला पाहिजे. आपण वापरत असलेल्या वस्तु कमी करू शकतो का ? केवळ जुनी झाली म्हणून ती वस्तु टाकायची हे आपण टाळू शकतो का ? ती टाकायच्या पूर्वी आपणच तिचा पुर्नवापर करू शकतो का ? असा विचार आपण सर्वांनीच करायला हवा आहे. तसेच उत्पादन कंपन्यांनी आपापल्या उत्पादनांवर प्रक्रिया करण्याची जबाबदारी घ्यायला पाहिजे. लांब पत्त्याचे उत्पादन खर्चाचे गणित पाहता, उत्पादकांना त्यांची वापरून झालेली उत्पादने ग्राहकांकडून परत घेणे हे फायद्याचेच ठरते. उदाहरण - वापरून संपलेल्या खाद्यतेलाच्या पत्र्याचे डबे हे उत्पादन कंपनी ग्राहकांकडून परत घेते व नवीन खरेदीवर काही रकमेची सूटही देते. असे सर्वच उत्पादनांच्या बाबतीत व्हायला पाहिजे.

प्रत्येकाने स्वतःच्या परिसरात निर्माण होणाऱ्या घन कचऱ्याचे प्रमाण कमीत कमी करण्याचे प्रयत्न करायलाच हवेत. त्या पुढची पायरी म्हणजे नागरिकांनी कचऱ्याचे वर्गीकरण चार प्रकारात करावे असे अपेक्षित आहे. रिसाईकेबल (पुन्हा प्रक्रिया करता येण्यासारखा), रियुसेबल (आहे त्याच स्वरूपातील टाकाऊ, पदार्थ पुन्हा वापरता येईल असा), बायोडिग्रेडेबल (विघटन होणारा) आणि प्रक्रिया न करता येण्याजोगा कचरा. असे वर्गीकरण केल्यावर विघटन होणाऱ्या कचऱ्यावर प्रक्रिया करून त्याचा खत म्हणून वापर करण्याची जबाबदारीही आता नागरिकांचीच आहे, ती आपण उचलायला हवी.

सर्वप्रथम व्यक्तिगत आणि कौटुंबिक पातळीवर याबद्दल जाणीव निर्माण करायला पाहिजे; कारण तिथूनच व्यवस्थापनाला सुरुवात करायची आहे. हे झाले नाहीतर सार्वजनिक यंत्रणा (ग्रामपंचायत, नगरपालिका) काही करू शकणार नाही.

या पुढची पायरी म्हणजे गाव-नगर पातळीवर घन कचरा व्यवस्थापनाचे नियोजन कचरा वर्गीकरण, जमा करून आणणे, विल्हेवाट, विक्री इ. सर्व घटकांचा विचार व्हायला पाहिजे. यात अनेक संस्था, गट सहभागी झाले तर हे काम यशस्वी होऊ शकते. संपूर्ण स्वच्छता अभियानासाठीच नाहीतर घनकचरा व्यवस्थापनासाठी ही मुख्यत्वे कार्यक्रम घेता येतील.

अनेक इलेक्ट्रॉनिक साधन सुद्धा बंद पडल्या अवस्थेत असतात, त्यांचा समावेश घनकचऱ्यातच होतो. उदाहरणार्थ - मोबाईल, संगणक, प्रिंटर इत्यादी व इतर मशिनसचा मोठ्या प्रमाणावर घनकचरा निर्माण झाला आहे. या वस्तुंना दुरुस्त करून नव्याने उपयोगात आणता येते, परंतु ग्राहक नवीन वस्तु घेणे पसंद करतो. परिणामी, या बंद साधनांचा साठा वाढत जातो. निकाली घन कचरा वाढतो. या प्लास्टीक, मेटलचा कचरा अजैविक असल्याने चिरकाल पृथ्वीतलावर राहतो. तेव्हा या इलेक्ट्रॉनिक साधनांचा उपयोग ही योग्य रीतीने करायला हवा.

घनकचऱ्याचे परिणामकारक व्यवस्थापन तीन तत्वांवर अवलंबून आहे. १) वापर कमी करणे, २) पुर्नवापर, ३) चक्रीकरण, पुर्नप्रक्रिया.

एकदाच वापरण्याच्या वस्तुंमुळे प्रचंड प्रमाणावर टाकाऊ पदार्थ तयार होतात. फेकण्याजोगे साहित्य वापरण्यापेक्षा कायमस्वरूपी वापरण्यात येणाऱ्या वस्तुंचा वापर केल्यास टाकाऊ वस्तुंची निर्मिती कमी होईल. उदा. चहासाठी प्लास्टीक कप वापरण्याएवजी चिनी मातीचे किंवा काचेचे कप वापरावेत. तसेच टाकाऊ पदार्थ पुन्हा वापरणे म्हणजे पुर्नवापर. टाकाऊ पदार्थ अनेक प्रकारांनी वापरता येतात. जुने प्लास्टीकचे, धातूचे डबे, बाटल्या, बरण्या पुनःहा वापरल्यामुळे अविघनशील कचऱ्याचे प्रमाण कमी होईल. भंगारापासून परत लोखंडी वस्तु तयार करणे, हे पुर्नप्रक्रियेचे उत्तम उदाहरण आहे.

घनकचरा म्हणजे रोजच्या वापरातून उरलेला निरुपयोगी पदार्थ. ग्रामीण भागापेक्षा शहरी भागातून निघणारा घनकचरा व त्याची विल्हेवाट ही जगापुढील एक मोठी समस्या आहे. पूर्वीच्या काळी घनकचरा विल्हेवाटीची फार समस्या

नव्हती; कारण लोकसंख्या कमी होती आणि घनकचरा टाकण्यासाठी जमीन मोठ्या प्रमाणात उपलब्ध होती. परंतु आता लोकसंख्या वाढल्यामुळे घनकचरा मोठ्या प्रमाणात तयार होतो व जमीन पूर्वी होती तेवढीच आहे. तेव्हा या सर्वांना आता कुठेतरी आवर घालणे गरजेचे आहे आणि ते आपल्याच हातात आहे.

समृद्धीकडे वाटचाल करत असलेल्या मनुष्याने सर्वांगीण विकास साधण्याकरिता या कचरा व्यवस्थापनावर सुद्धा लक्ष द्यायला हवे. कचरा निर्माण करणारे आपणच असतांना तो संपवणारे ही आपणच असायला पाहिजे. सर्वप्रथम स्वतः, आपलं घर, गाव, शहर, राज्य, देश नि मग सर्व जग असा बदल घडायला हवा, जेणेकरून आपण केलेल्या सुरुवातीचं रूपांतरण विश्वरूपात होईल तेव्हाच आपलं खरं शौर्य दिसेल, जेव्हा आपल्या छोट्याश्या प्रयत्नातून हे संपूर्ण जग स्वच्छ नि सुंदर दिसेल.

'कुडा कचरा हटाना है,
और शौर्य हमारा दिखाना है !
सुनो मेरे भाई, सुनो मेरी बहना,
स्वच्छ भारत, सुंदर भारत....
हमको इसे बनाना है !!

हे गित अगदी समर्पक असून, प्रत्येक देशवासियांसाठी हा महत्वपूर्ण संदेश सुद्धा आहे.

पवन जायभाये
बी.एस्सी. भाग-३

मोगरा

हाक मला सुगंधी देतोय मोगरा
माझा अस्त्रा जिवाचा होतोय मोगरा ?
ही रात्र श्रावणाची ओली राहावली
केसांत चिब माझ्या न्हातोय मोगरा ?
येथे कशी कळेना मैफील रंगली
गाणे सुरात माझ्या गातोय मोगरा ?
येऊन आंगा थोडे शब्दापल्याडचे
लाजून हा उस्त्राणा घेतोय मोगरा ?
वाटेवरी तुझ्या का डोळे विस्त्रावले ?
स्वप्नामधील गावा नेतोय मोगरा ?
विश्वास्त ठेवला मी श्वास्त्रांवर तुझ्या
आरे लुटून माझे जातोय मोगरा ?

जेथे जातो तेथे

जेथे जातो तेथे, अनुपम फुले,
काटांवर झुले, खेळतात।
जेथे जातो तेथे, सूर्य-चंद्र-तारे,
झोपतात सारे, अंधारात।
जेथे जातो तेथे, निर्झर वाहती,
आटुनिया जाती, क्षणार्धात।
जेथे जातो तेथे, सरवे नि सोयरे,
भाव आप-परे, जाणतात।
जेथे जातो तेथे, उगवती दिन,
क्षीण आणि दीन करतात।
(क्षण क्षण क्षीण करतात)
जेथे जातो तेथे गताचा आढव
दुःखाचा साठव, हृदयात।

कु. निशिगंधा चिमणकर
बी.एस्सी. भाग-३

घन कचरा व्यवस्थापन व मानवी दृष्टीकोन

कचरा व्यवस्थापनातून कचऱ्याचा पुर्नवापर

आपण जसजशी भौतिक प्रगती करतो, तसतसं आपलं वस्तू वापरण्याचं प्रमाण वाढतं आणि पर्यायाने आपण निर्माण केलेल्या कचऱ्याचे प्रमाण आणि प्रकारही अधिक वाढतात. पण तो कचरा साठवून राहिल्याने त्याचा नागरिकांवर व पर्यावरणावर दुष्परिणाम होतो. त्यामुळे कचरा हा योग्य पद्धतीनं निकाली काढला गेला पाहिजे. सर्व कचरा हानिकारक नसतो. कचऱ्याचे अनेक प्रकार असतात. त्यातील दोन मुख्य प्रकार म्हणजे सेंद्रिय आणि असेंद्रिय.

असेंद्रिय कचरा अनेक पद्धतीने पुन्हा वापरण्यासाठी उपयोगात आणला जाऊ शकतो. सेंद्रिय कचरा प्रत्येक माणसाला उपयोगात आणणे सहज शक्य आहे. पण या सगळ्यासाठी इच्छाशक्ती असणं अत्यावश्यक आहे. कचऱ्याकडे बघण्याचा आपला दृष्टिकोन बदलायला हवा. कचरा ही समस्या म्हणून न पाहता त्याकडे एक संधी म्हणून पाहायला हवे.

प्रश्नांचं स्वरूप :- घनकचरा म्हणजे रोजच्या वापरातून उरलेल्या निरुपयोगी वस्तूंचा साठा. आपली घरे, कार्यालये, दुकाने, भाजी मंड्या, उपहार गृहे, सार्वजनिक संस्था, औद्योगिक संस्था, रुग्णालये, शेती, बांधकामे या सर्व ठिकाणांहून अनेक वेगवेगळ्या प्रकारचा कचरा रोजच्या रोज तयार होत असतो. आपण आपल्या घरातल्या टाकाऊ वस्तू, कचरा सरळ घराबाहेर फेकून देतो. सोसायटीच्या आवारात, सार्वजनिक रस्त्यांवर, नाल्यांमध्ये, समुद्र नद्यांमध्ये अगदी कुठेही आपण कचरा फेकतो. याबद्दल आपल्याला कोणी प्रश्न विचारत नाही किंवा दंडही करत नाही.

महाराष्ट्रात एका वर्षाचे अंदाजे ९३ लाख टन कचरा तयार होतो. (महाराष्ट्रातला प्रत्येक माणूस दर दिवसाला अंदाजे ०.१४ ते ०.६३ किलो कचरा करतो) त्यापैकी ७५ लाख टन घनकचरा हा नगरपालिका क्षेत्रांत तयार होतो. म्हणजेच वर्षाला सुमारे ९३००० मालगाडीचे डबे भरतील एवढा कचरा महाराष्ट्रात तयार होतो. या ९३००० डब्यांपैकी ७५००० डबे शहरांमधल्या कचऱ्याचेच असतात. हा सर्व कचरा केवळ मुख्य करून शहरांमध्ये तयार होणारा आहे.

याशिवाय दरवर्षी इतर प्रकारचा कचराही निर्माण होतो.

महाराष्ट्रात दरवर्षी निर्माण होणारा इतर कचरा

इतर प्रकारचा कचरा	दरवर्षी (लाख टन)
घरगुती कचरा	७५
विषारी कचरा	१८
दवाखान्यातील कचरा	०.११
ई-कचरा	०.२०
एकूण कचरा	९३.३१

जागतिक बँकेच्या अंदाजानुसार २०१५ मध्ये महाराष्ट्राच्या शहरी भागातून दररोज ५७,६०० टन एवढा कचरा निर्माण झाला. महाराष्ट्रात दर दिवशी ४३.५ टन बायोमेडिकल कचरा तयार होतो. देशामध्ये तयार होणाऱ्या एकूण बायोमेडिकल कचऱ्यापैकी ६०% कचरा हा एकट्या महाराष्ट्रात तयार होतो. महाराष्ट्रात दरवर्षी एकूण १८ लाख टन विषारी कचरा तयार होतो. हा कचरा कारखान्यांमध्ये तयार होतो. उदा. रासायनिक, कागद तयार करणे, कारखाने, पेट्रोकेमिकल.

विभागनिहाय विषारी कचऱ्याची निर्मिती

विभाग	विषारी कचरा (लाख टन)
अमरावती	०.०६९
कोल्हापूर	०.५९
चंद्रपूर	०.८५
नागपूर	०.८८
नाशिक	१.०१
औरंगाबाद	१.३२
नवी मुंबई	१.४२
पुणे	१.५१
ठाणे	१.५८
रायगड	२.५५
कल्याण	२.६१
मुंबई	३.६६
एकूण	१८.०५

गेल्या २० वर्षात तयार झालेल्या कचऱ्याच्या डोंगरांमुळे गावात दुर्गंधी, माशा-डासांचे साम्राज्य, कचऱ्यातून पाझरणाऱ्या पाण्यामुळे दूषित बनलेले भूजल, विहीर-बोअरवेल्सचे खराब पाणी आणि त्यामुळे सतत उद्भवणाऱ्या आरोग्याचा समस्या यांनी गंभीर रूप धारण केले आहे.

आपल्या आसपास तयार होणाऱ्या बहुतांश कचऱ्यावर प्रक्रिया करून तो पुन्हा उपयोगात आणला जाऊ शकतो; परंतु अजूनही आपल्याला याचे गांभीर्य नसल्याने आपण कचरा वेगवेगळा करण्यासारखी साधी गोष्ट देखील करत नाही. उघड्यावर टाकलेला कचरा तिथेच कुजतो, त्यातून दुर्गंधी सुटते व रोगराई पसरते.

वाढती लोकसंख्या, शहरीकरण, उंचावलेले राहणीमान, औद्योगिकीकरण, प्लास्टीकचा वाढता वापर यांमुळे तयार होणाऱ्या कचऱ्याचे प्रमाण व प्रकार वाढत जातात.

असं का होत ?

घनकचऱ्याच्या समस्येला सामोरे जाण्यास जरी आपला कायदा सुयोग्य असला तरी खरी अडचण अंमलबजावणीची आहे. कचऱ्याच्या समस्येला आपण नागरिकही तितकेच जबाबदार आहोत हे आपण लक्षात घ्यायला हवे.

- आपला परिसर स्वच्छ ठेवावा.
- चॉकलेट खारून गुंडाळलेला कागद तिथेच फेकू नये.
- पाणी पिऊन झाल्यावर बाटली गाडीच्या खिडकीतून भिरकावून देऊ नये.
- वहीचा एखादा कागद फाडून रस्त्यातच टाकून देऊ नये.

या वरील साध्या बाबी आपण लक्षात ठेवत नाही. आपण निष्काळजीपणे वस्तू टाकून देतो. आपला परिसर म्हणजे कचरा टाकण्याचे ठिकाण आहे असं आपण समजतो.

वाढती लोकसंख्या व आर्थिक परिस्थिती त्याच बरोबर रोजगार, वैयक्तिक मिळकत, पुन्हा उपयोगात आणण्यासाठी प्रक्रिया करत येण्यासारखा वस्तूचे महत्व, व्यवस्थापन यंत्रणेची किंमत इतर अशा अनेक गोष्टी घनकचरा व्यवस्थेवर परिणाम करतात.

महाराष्ट्रात दर दिवशी २०,५०० टन हून अधिक

घनकचरा निर्माण होतो. महाराष्ट्रातील घनकचऱ्याची समस्या ही फार मोठी आहे आणि ती दिवसेंदिवस वाढतच जाणार आहे. असक्षम व्यवस्थापनाबद्दल असलेल्या बेफिकीर दृष्टिकोनाचा परिणाम पर्यावरणाच्या दर्जावर व सार्वजनिक स्वास्थावर होतो आहे. नैसर्गिक साधनसंपत्तीचे नुकसान, खालवलेले पर्यावरण व सार्वजनिक स्वास्थांचा आजचा दर्जा धोकादायक परिस्थितीचा वरचा आहे.

- कचरा कमी करायला हवा, तो कमी करण्याचे सर्व मार्ग शोधायला हवे, अवलंबायला हवे.
- टाकाऊ गोष्टींचा जास्तीत जास्त वापर आणि त्यावर पुर्नप्रक्रिया करायला हवी.
- घराघरामध्ये आपापल्या कचऱ्याचा बंदोबस्त कसा केला पाहिजे याबद्दल लोकांना माहिती उपलब्ध करून, लोकांचा सहभाग वाढवायला हवा.
- प्रत्येक घराला कचरा व्यवस्थापनेच्या रचनेशी जोडायला हवे.
- कचरा व्यवस्थापन करणाऱ्यास कर्मचाऱ्यांना सुरक्षित व आरोग्याला हितकारक अशा सुविधा पुरवायला हव्यात.
- कचरा व्यवस्थापनासाठी आधुनिक व नाविन्यपूर्ण तंत्रज्ञानाचा स्विकार करायला हवा.

महत्वाच्या सुचना :

- १) कचऱ्यातून विजनिर्मिती, खतनिर्मिती उद्योगांना चालना
- २) उर्वरित कचरा खड्ड्यांमध्ये न पुरता शास्त्रीयरित्या जाळून राख.
- ३) कचरा व्यवस्थापन खाजगी कंपन्यांकडून.
- ४) कचऱ्यावर पुर्नप्रक्रिया

घन कचरा व्यवस्थापन

- जैविक कचरा वगळता इतर वर्गीकरण केलेला कचरा योग्यरित्या विल्हेवाटीसाठी खाजगी कंपनीकडून गोळा केला जाईल.
- संपूर्ण शहराचा किंवा गावाचा घनकचरा एकत्र गोळा करण्यापेक्षा त्याची अनेक छोट्या-छोट्या केंद्रांवर विल्हेवाट लावणं अधिक उपयुक्त ठरेल.

- काही हानिकारक कचरा गोळा करण्यासाठी वेगळी सोय केली जाईल.

या सर्वांवर लक्ष, स्थानिक कचरा व्यवस्थापन विभागाची शाखा ठेवेल.

शहरांमधल्या सर्व भाजी मंड्या, धान्य बाजार, उपहारगृहे व कचरा व्यवस्थापन करणारी खाजगी कंपनी एकत्रितरित्या फायदेशीर कार्यक्रम राबवतील. यातून अनेक कचरा नियोजनाच्या नविन पद्धती उदयास येतील. आपला परिसर स्वच्छ व सुंदर ठेवण्यासाठी आपण जागृत झाले पाहिजे कारण कचरा हा मानवानेच केला म्हणून त्याच मानवाचे कर्तव्य बनते की तोच तो कचऱ्याचे व्यवस्थापन करून कचरा नष्ट करेल. आणि त्यामुळे आपला परिसर स्वच्छ व सुंदर होईल. ही बाब प्रत्येक मानवाने लक्षात घेतली पाहिजे आणि यावर काहीतरी काम केले पाहिजे.

कु. ज्ञानेश्वरी पोलकट
बी.एस्सी. भाग-१

सरण

असच तु फुलत राहावं
मी मात्र सुकून जावे,
स्मित असो तुझ्या अघरी
मी नयनाश्र बरसावे !

सारी सुरवे तुला माझी
तुझी दुःखे मला मिळो
मी करावे कष्ट अविरत
तू निरंतर स्वप्न बघावे !

जन्मदात्यांच्याही चरणी
फूले सदा तुझीच असो
मात्र त्यांना उब देण्या
मी जळून खाक व्हावे !

कु. साक्षी देशमुख
बी.एस्सी. भाग-३

घन कचरा निर्मुलन

आपल्या दैनंदिन जीवनामध्ये आपण अनेक अशा निरुपयोगी वस्तु फेकत असतो, परंतु त्या खर्च निरुपयोगी झाल्यात का ? याचा विचार देखील आपल्याला येत नाही जसे की उदाहरण म्हणून आपण कागद घेऊ या. एका कागदावर आपण रेषा ओढून हवे तेवढा परिच्छेद लिहतो आणि उरलेला भाग आणि त्याच बरोबर मागील पानच्या रेषा ज्या न लिहीलेल्या आहेत असा कागद फेकतो आणि मग त्या कागदाला रफ समजून नविन कागदावर मजकूर लिहून घेतो. अशा प्रकारे आपण दैनंदिन जीवनामध्ये अनेक प्रकारे कचरा निर्माण तयार करत असतो.

अशा अनेक प्रकारे घन कचरा अथवा इतरत्र कचरा आपण निर्माण करत असतो. नुसते एवढेच नाही तर घातक असणारे वस्तुचा कचरा सुद्धा आपण थांबवण्या ऐवजी पुन्हा पुन्हा मागवितो. त्याचा वापर करतो. या कारणाने आपण स्वतःचेच नव्हे तर संपूर्ण लोकांचे जीवन धोक्यात टाकतो.

कचरा कोणताही असो परंतु त्याचा परिणाम हा हानिकारकच होतो कारण कचऱ्याचे निर्मुलन जर आपण जाळून केले तर आपल्या ऑक्सीजन थराला त्रास होऊ शकतो आणि जमिनीमध्ये गाळून घेतले असता त्याचा परिणाम शेतावर आणि शेतीतल्या पिकांवर सुद्धा होऊ शकते. जर घन कचरा हा नदी, नाल्याच्या माध्यमातून निर्मुलन करण्याचा विचार केला तर पुर, त्सुनामी अश्या अनेक प्रकारच्या प्रसंगाला तोंड देण्याची वेळ येईल एवढेच नव्हे तर पिण्याच्या योग्य पाणी सुद्धा मिळणार नाही. पाण्याशिवाय जीवन नाही, पाणी हेच जीवन आहे.

सध्याच्या काळात स्थानिक स्वराज्य संस्थांनी घरा घरातून घनकचरा गोळा करण्याची व्यवस्था केली आहे. कचरा गोळा करणारी माणसे प्रत्येक घरातून गोळा करून ट्रक मधून नेत आहेत. साधारणतः कचऱ्याचे प्रमाण हे दर दिवशी १,००,००० टन एवढा कचरा काढला जातो. एवढा कचरा भारताच्या एकूण नुसत्या ५० शहरातून निघतो.

म्हणून सर्वांनी या घन कचरा निर्मुलन कार्यामध्ये सहभाग घ्यावा व भारताला कचरा मुक्त होण्यास व प्रदुषण मुक्त होण्यास आपला सहभाग द्यावा.

कु. आकांक्षा डोंगरे
बी.एस्सी. भाग-१

स्वच्छतेला पर्याय नाही...

आम्ही दोन आमचे दोन,
 आमचा होतो एक चौकोन.
 त्यांच्यातले जबाबदार असतात दोन,
 उरलेल्यांना समजावून सांगणार कोण ?
 सकाळी सकाळी आत दोन स्त्रीया लागल्या कलकलू,
 गप्प बसलेले नवरे मग लागले मध्ये हळूच बोलू.
 बोलता बोलता हमरी तुमरी बाचाबाची वाढली,
 एकाने मग नविन युक्ती काढली.
 म्हणाला, दादा कचरा केल्याशिवाय
 माझ काही जमणार नाही,
 कचरा रस्त्यावर टाकल्याशिवाय
 आपल्या घराचा प्रश्न मिटणार नाही.
 दुसऱ्यानेही होकार दिला, कचरा रस्त्यावर फेकून दिला.
 हे सर्व ऐकून गाडगेबाबा माझ्या स्वप्नात आले,
 लुकलुकणारे त्यांचे डोळे त्या दोघांकडे बघू लागले.
 भरल्या घरल्या भारताची कीर्ती स्वप्न रंगविली होती,
 पोटाला चिमटा घेऊन गाव-शहरे साफ केली होती.
 झालं कारे सगळं बोलून ? गाडगेबाबांनी प्रश्न केला,
 अवघडल्यासारखं एकजण हळूच मध्ये बोलून गेला.
 प्लास्टीकच्या पिशव्या न वापरण मला काही जमणार नाही,
 सरकारने कडक कायदा काढल्याशिवाय,
 स्वच्छ भारत काही होणार नाही.
 ऐवढे सगळे ऐकून गाडगेबाबाचं काळीज फाटलं,
 कारण आपल्याचं भारतीयांनी
 स्वच्छतेसाठी प्रयत्न करून सोडून दिलं.
 कित्येक वर्षांचं दृश्य सारं डोळ्यासमोर तरळू लागलं,
 कळवळणारं मन त्यांचं विधात्याला म्हणू लागलं,
 देवा असा दिवस दावण्याआधी,
 यांना स्वच्छता करण्याची बुद्धी का दिली नाही,
 माणसांचा जन्म देण्यापेक्षा यांना प्राणी का केलं नाही ?

वैभव माने

एम.एस्सी. भाग-१ (सुक्ष्मजीवशास्त्र)

बाप

संसार असते एक बाक
 त्या बाकावर बसतात मुलं, आई आणि बाप
 ज्याच्यामुळे संसाराचे
 कळते आपल्याला माप,
 असते परिवारात त्याची थाप
 तो नसता तर काय झाले असते “बाप रे बाप”.
 तो कधी असतो विषारी साप
 तर कधी आंबट गोड ताक,
 तो घाम गाळून, कष्ट करून
 भरवितो आपल्या चिमुकल्यांना घास.
 आयुष्याच्या अखेर पर्यंत
 कष्ट करून जेटहा,
 मुळते त्याचं काख
 आणि मारतो हाक
 या आशेने की,
 माझे मुलं भरवतील
 मला एखादी भाकरीची फाक.
 जेटहा मुलांना घेते ताप
 तो पैसे लावतो,
 शंभर, हजार आणि लाख,
 हेच मुलं जेटहा मोठी होतात,
 सगळं करून टाकतात खाक.
 म्हणून मित्रांनीं,
 देऊ नका आपल्या आई-बापाला त्रास,
 खा त्यांचे घास आणि भरवजा त्यांना घास.
 आणि नेहमी ठेवा त्यांच्यावर विश्वास
 हिच एक गोष्ट खास.

समीर पाटील

बी.एस्सी. भाग-१

घन कचरा व्यवस्थापन

वाईट असो वा सुंदर,
धोका झाल्याशिवाय पर्याय नाही उरणार।
पण त्याला काय माहीत,
एका व्यक्तीची किंमत काय असणार ॥१॥
पण त्याला काय माहीत एका व्यक्तीची किंमत काय असणार
कुठून आला ? काय आला ?
कुणास नाही ठाऊक ?
पण मात्र पिढी त्याला,
रस्त्यावर फेकणार आऊक-जाऊक ॥२॥
पण त्याला काय माहीत एका व्यक्तीची किंमत काय असणार
जिथं डोकं असेल, तिथंच हेल्मेट असेल,
जिथं विद्यार्थी असेल, तिथंच ओळखपत्र असेल
पण मात्र जिथं खरा माणूस नसेल,
तिथंच घनकचरा असेल ॥३॥
पण त्याला काय माहीत एका व्यक्तीची किंमत काय असणार
ज्या ठिकाणी तू, तिथं मी,
याशिवाय आपल्यात नाही कोणी।
पण मात्र दोघांमध्ये तिसरा,
घन-कचऱ्याशिवाय नाही कोणी, नाही कोणी ॥४॥
पण त्याला काय माहीत एका व्यक्तीची किंमत काय असणार
यशाची प्रत्येक शिखरं गाढताना,
मनुष्याची होते उत्तम वृद्धी ।
पण ज्याला आपलं वास्तव्यच माहीत नाही,
त्याला काय असणार माणसासारखी बुद्धी ॥५॥
पण त्याला काय माहीत एका व्यक्तीची किंमत काय असणार
नकळत होणारी चूक असते खूप मोठी,
आपल्याला घडून येणारे परिणाम छोटे ।
कळत असलेली चूक असते खूप छोटी,
पण मात्र त्यानंतरचे परिणाम असतात मोठे ॥६॥
पण त्याला काय माहीत एका व्यक्तीची किंमत काय असणार
रस्त्यावर कचरा फेकून होतो मोकळे,
केरेच्या टोपलीच्या वजनाचा आपल्याला धोखा।
पण मात्र कॉलरा-सारख्या रोगांशी साथ देतांना,
आपल्या पैश्याचा होतो रिकामा खोका ॥७॥
पण त्याला काय माहीत एका व्यक्तीची किंमत काय असणार

करूया भारत स्वच्छ आणि स्वस्थ,
ध्येय न ठेऊनि नुसते फोटो काढणे।
देऊया सर्वास स्वच्छतेचा मंत्र,
हाती घेऊनिया टोपली आणि झाडणे ॥८॥
पण त्याला काय माहीत एका व्यक्तीची किंमत काय असणार
आठवूनी नाम गाडगेबाबांचे, करूया गावोगाव स्वच्छ,
मात्र कुणी-कुणास न लेखून तुच्छ।
यशापयश मिळवून देऊन, श्रेय देऊन,
करूया सफल आपले मिशन भारत स्वच्छ ॥९॥
पण त्याला काय माहीत एका व्यक्तीची किंमत काय असणार
करवूनि - कचरा लहान।
देऊया जगाला स्वच्छता महान ॥१०॥
पण त्याला काय माहीत एका व्यक्तीची किंमत काय असणार

वैभव तेवले

बी.एस्सी. भाग-१

का होते त्यांची हत्या गर्भातच ?

एकीकडे होते स्वागत खिजन्माचं,
तर दुसरीकडे का होते तिची हत्या गर्भातच?
आज प्रत्येक क्षेत्रात आहेतच मुली मुलांच्या
खांद्याला खांद्या लाऊन काम करण्यासाठी,
म्हणूनच केली जाते का तिची हत्या गर्भातच?
सहन होत नाही का काही लोकांना
मुलींची ही प्रगती, हे वर्चस्व,
म्हणूनच केली जाते का तिची हत्या गर्भातच ?
त्यांना वाटते का आपण पुर्णपणे निर्भर होऊ मुलींवर,
त्यांना वाटतो का त्यांच्या अस्तित्वाचा धोका,
म्हणूनच केली जाते का तिची हत्या गर्भातच ?
त्यांना पाहिजे असते वंशाचा दिवा
त्यांचा वंश पुढे चालवण्यासाठी,
म्हणूनच केली जाते का तिची हत्या गर्भातच ?

कु. वैष्णवी आखरे

बी.एस्सी. भाग-२

आजी मज तो निशिकांत दिसला !!

आजी मज तो निशिकांत दिसला !!
ज्याच्या शीतल मंद प्रकाशानं,
हा सगळा आसमंत भिजला..
आजी मज तो निशिकांत दिसला !!
शोधत अस्तता मी त्याला,
निंबोनीमागे लपला ?
मी त्याकडे पाहताच,
झोडकव् हलकेच हसला ?
आजी मज तो निशिकांत दिसला !!
कित्येक दिवसांचा रसलेला तो,
आज भरभरुनी हसला..
त्यास्त्री बघुनी कळेना,
मज मनी हा भाव कसला ?
ते असो न काहीही,
मजला तो हसमुख दिसला ?
हो हो आजी... याच क्षणी..
मज तो निशिकांत दिसला ...!?

शुभम् जयराज
बी.एस्सी. भाग-३

याला जीवन ऐसे नाव !

जीवनात स्वरूप करण्याजोगं असतं
संकटाला कधी कंटाळायच नसतं
त्याला सामोरेच जायचं असतं
कुणी नाव ठेवली तरी थांबायचं नसतं
आपलं चांगल काम रेटायचं असतं
अपयशाने कधी स्वचायचं नसतं
जिद्दीचं बळ वाढवायचं असतं
नाराज मुळी व्हायचं नसतं
चैतन्य सदा फुलवायचं असतं
पाय ओढले म्हणून परतायचं नसतं
पुढे अन् पुढेच जायचं असतं
लोक नदिला घाबरायचं नसतं
आपलं सामर्थ्य दाखवयाचं असतं
जीवनात स्वरूप करण्याजोगं असतं
आपलं लक्ष फक्त तिकडे नसतं
उत्कृष्ट काम करण्यामध्येच परमोच्च आनंद आहे

(संगहित)

कु. तृप्ती उगले

एम्.एस्सी. भाग-१ (गणित)

बा निसर्गा....!!

देखसी पावसा
केवढा हा दुःखाचा गलबला,
तुज साठी बळीराजानं
नित्य टाहो फोडीला.

इंद्रासी यज्ञ केले
दिले वरुणासी निमंत्रण
स्वीकार रे राजा आता
या धरणीपुत्राचं आमंत्रण.

काट्या कुट्याची रं वाट
चाले अनवाणी,
पोटासाठी चटणी भाकर
नि धिर आहे पाणी.

दुःखाच्या या विलख्याचा
काटा रे रूतला,
का 'बा निसर्गा'
तू असा रे कोपला...?

पवन जायभाये

बी.एस्सी. भाग-३

हरवलेलं गाव

रुप दिवसांनी मोठी सुट्टी मिळाली
गजर बंद करून थोडी झोप काढावी वाटली
पण बाबा आमचे हौशी लावून बसले दूरदर्शन
नेत्यांच्या आवाजत कसलं होतय मग शयन ?

कॉफी चा घोट घेतला आणि
डोक्यात लाईट पेटला
वॉट्सअप वर प्लान बनवून
गावाकडे धावा घेतला !

सगळ्या मैत्रिणी माझ्या भारी उत्साही
मेकअप उतरण्या आधी फोटो काढायची घाई !
गाडी आमची निघाली लोकेशनच्या शोधात
माहीत नव्हतं इतका बदल झालाय दृश्यात !
गावाकडचा थंड वारा आज थोडा तापलेला वाटला
काचा वर करून ए.सी. चालू करावा लागला
सूर्य महाराज आमच्यावर जास्तीच तापले होते
बॉटल मधले पाणी सुद्धा संपू लागले होते
हिरवेगार शेत होते जिथे
आज दिसली तिथे फक्त माती

पारावरचा देव गेला
राहिल्या फक्त वाती

गावाच्या तलावावर पक्षी दिसायचे छान
त्याच तलावाला पाहून खाली घालावी लागली मान
काल जिथे मुले खेळायची मानून प्ले ग्राऊंड
आज कचरा जमुन झालं त्याचं डपिंग ग्राऊंड
गाडी चालता चालता संध्याकाळ झाली
चंद्र दिसल्या बरोबर थोडी विश्रांती घ्यावी वाटली
गावाकडचं आकाश आज शहरासारखंच वाटले,
धुर आणि धुक्यामुळे तान्यांचे लुक-लुकणे लपले
घरी निघाली गाडी फक्त निराश मनात

काय समृद्ध राहिलं या पर्यावरणात ?

रस्त्याच्या किनारी गार्यांचा कळप दिसला
त्यांचे हंबरणे ऐकून मला दिलासा मिळाला

कळपातलं एक वासरू, अचानक खाली कोसळले
आम्ही मदत करण्याआधी ते शेवटचे हंबरले
गवत समझून प्लास्टीक खाल्लं असावं त्यांनी
आपल्यामुळे मृत्यु झाला असं वाटत राहाते मनी....

कु. मैथिली देशमुख

जीवरसायनशास्त्र विभाग

घनकचरा

इकडे पाहता तिकडे पाहता दिसते सगळीकडे
नजर फिरता दिसतात घनकचऱ्याचे सडे
म्हणूनच आता सर्वांच्या डोक्यावर संकट पडे

इंग्रजानंतर आता आले कचऱ्याचे राज्य
त्याची विल्हेवाट लावण्यासाठी होवू सज्ज
आतापासूनच पॉलीथीनला वापरातून करू वर्ज

भारतभुमीला म्हणतात संताची भुमी पवित्र
त्यांनी दिला अनमोल स्वच्छतेचा मंत्र
त्यावर पाऊल ठेवून शास्त्रज्ञांनी निर्मिले,
घनकचरा व्यवस्थापनाचे तंत्र

तंत्रामधुनी चालऊया व्यवस्थापनाचे सत्र
अन् पृथ्वीला देवू ओझोनचे छत्र
तेव्हा खरेच भारत बनेल स्वच्छतेचे एकमेव केंद्र

प्लास्टीक पेपरचा करू पुर्नवापर
खर्च वाचवू, रोजगार संधी पुरवू लवकर
बनवू विकसीत भारत स्वच्छ व सुंदर

कु. आरती गोळे

बी.एस्सी. भाग-9

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5th Merit in M.Sc. (Microbiology)
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S.G.B. Amravati University,
Amravati



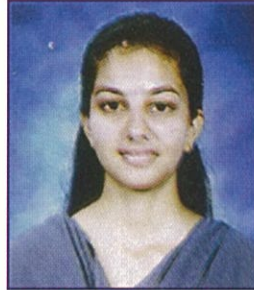
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State Level Best Volunteer Award
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Nanded



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Best Sportsman
Colour in Weight Lifting



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B.Sc. III
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B.Sc. I
Colour in Wrestling

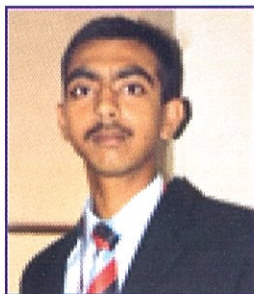


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2nd Prize in University Level
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Director
Physical Education
Recognized as Ph.D. Supervisor
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Assistant Professor & Head
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Dr. Pramod Khadse
Assistant Professor
Department of Botany
Awarded with Ph.D. Degree
by S.G.B. Amravati University,
Amravati



Dr. Archana Sawarkar
Assistant Professor
Department of Zoology
Achieved 2nd Prize for
Best Paper Presentation in
International Conference, Nagpur



Dr. Pradip Deohate
Assistant Professor
Department of Chemistry
Received State Level Ideal Teacher
Award of Congress Teachers' Cell
Chief Editor, AUCTA Newsletter



Dr. Sudhir Kohchale
Assistant Professor
Department of Zoology
Qualified SET Examination
in Life Sciences-2018



Hindi Section

क्या भारत है कुडा ?

आपने अक्सर सुना होगा साफसफाई रखना और गंदगी न फैलाना अच्छे संस्कारों का लक्षण होता है. क्या आपको पता है कि आपके घर से कैसे कुडा निकलता है ? शायद आपको इसके बारे में पता नहीं होगा लेकिन कुडा भी आपके सफाईवाले संस्कारों के बारे में बहुत कुछ बताता है, अगर आप भी अपने घर से निकले प्लास्टिक, बचे हुए भोजन, सड़े हुए फल सब्जियाँ और बाकी की चीजें एक साथ कुडेदान में फेंक देते हैं तो इसका मतलब ये है की साफसफाई को लेकर आपके संस्कार अच्छे नहीं हैं और अगर आपके इलाके में इस कुडे के मैनेजमेंट की व्यवस्था नहीं है तो इसका मतलब ये है की वहाँ के सिस्टीम के संस्कार भी कुडे के नीचे दब चुके हैं. भारत में वायुप्रदूषण, जलप्रदूषण और ध्वनिप्रदूषण पर तो बातें होती रहती हैं, लेकिन कोई भी Solid Waste Pollution यानि कुडे और कचरेसे होनेवाले प्रदूषण पर बात नहीं करता जबकी यही कुडा न सिर्फ हमारे वातावरण में जहर घोलता है बल्की नदी को भी प्रदूषित करता है.

पर्यावरण मंत्रालय के मुताबिक भारत में हरसाल ६२० लाख टन कुडा निर्माण होता है वो भी बीना e-waste और hazardous waste के जिसमें से ५६ लाख टन प्लास्टिक का कचरा और २ लाख टन बायोमेडिकल कचरा होता है।

- भारत में हर व्यक्ति प्रतिदिन ४०० ग्राम कचरा पैदा करता है.
- ६२० लाख टन कुडे में से सिर्फ ७०% कुडा ही जमा किया जाता है इसका मतलब १९० लाख टन कचरा यहाँ वहाँ बिखरा रहता है. परिसरों, नदी, नालों को गंदा करता है.
- भारत में ६२० लाख टन कचरे में से सिर्फ ४५० लाख टन कचरा ही जमा हो पाता है.
- और इसमें से भी सिर्फ ३०% यानी १२९ लाख टन कचरे से ही खाद बनायी जाती है उसे रिसायकल किया जाता है या फिर उससे बिजली बनायी जाती है.

बाकी का कचरा डम्पींग ग्राऊंड्स में भेजा जाता है. यहाँ ये धीरे-धीरे एक बड़े पहाड की शकल ले लेता है. इस कचरे की वजह से कई तरह की बिमारियां फैलती हैं लेकिन कोई भी इसकी तरफ ध्यान नहीं देता. मीडिया में भी इसके बारेमें अक्सर चर्चा नहीं होती है.

क्या आपको पता है वर्ष २०४९ तक दिल्ली कुडे की त्सुनामी में डूब जाएगी....

आपने अपने शहरों में कुडे के ईन बड़े-बड़े पहाडों को जरूर देखा होगा जब आप इन डम्पींग ग्राऊंडस् के पास से गुजरते हैं तो वहाँ आपको असहनीय दुर्गंध झेलनी पडती है. छोटे शहरों को तो छोड ही दीजिए, देश की राजधानी दिल्ली भी इस बीमारी से परेशान है. कुडे की पहाडों की तस्वीरें दिल्ली की पहचान बन चुकी है. लेकिन क्या आपने कभी सोचा है यहाँ जो कुडा जमा हो रहा है वो आखिर जाएगा कहाँ ?

Center for Science and Environment के मुताबिक वर्ष २०४७ तक दिल्ली अपनेही कुडे के नीचे दबने लगेंगी. CSE के मुताबिक दिल्ली के सबसे बड़े भलस्वा डम्पींग ग्राऊंड की क्षमता १२ वर्ष पहले यानि २००६ में ही खत्म हो चुकी है इसी तरह दिल्ली के सबसे पुराने गाझीपुर डम्पींग ग्राऊंड की क्षमता १६ वर्ष पहले यानी सन २००२ में ही खत्म हो चुकी है.

क्षमता के पैमानों पर ओखला डम्पींग ग्राऊंड भी १२ साल पहले expire हो चुका है, लेकिन फिर भी दिल्ली के इन कुडा घरों की उंचाई हररोज बढ़ती जा रही है. यहां इन डम्पींग ग्राऊंड की उंचाई ५० मी. तक पहुंच चुकी है. ये उंचाई

कुतुबमिनार से सिर्फ २३ मी. कम है. कुतुबमिनार की उंचाई ७३ मी. है.

- | | | | |
|---------------------------|---|---------------------|---------------------------|
| ● भलस्वा डम्पींग ग्राऊंड | - | १२ वर्ष पहले (२००६) | } क्षमता खत्म हो चुकी है. |
| ● गाझीपुर डम्पींग ग्राऊंड | - | १६ वर्ष पहले (२००२) | |
| ● ओखला डम्पींग ग्राऊंड | - | ११ वर्ष पहले (२००७) | |

दिल्ली में प्रतिदिन ९५०० मे.टन कचरा निकलता है लेकिन पूरे देश की तरह इसमें से सिर्फ ७०% ही जमा किया जाता है और जमा किये गए कचरे से भी सिर्फ २० से ३०% का ही ट्रिटमेंट हो पाता है. लेकिन जब भी waste energy plant में खराबी हो तो बाकी का कुड़ा भी यहां डाला जाता है.

यही हाल मुंबई का भी है जहाँ सबसे बड़ा डम्पींग ग्राऊंड देवनार है. मुंबई का आधा कचरा देवनार डम्पींग ग्राऊंड में ही जमा किया जाता है. ये भारत का सबसे पुराना और सबसे बड़ा डम्पींग ग्राऊंड है. देवनार के डम्पींग ग्राऊंड की उंचाई १८ मंजील उंची इमारत के बराबर हो चुकी है और ये डम्पींग ग्राऊंड आसपास के पर्यावरण को भी नुकसान पहुँचा रहा है.

डम्पींग ग्राऊंड में जमा होनेवाली कुड़े की मैनेजमेंट नहीं होने की वजह से इसमें से मिथेन गैस निकलने लगती है और कई बार इसमें भी आग लग जाती है. ध्यान देनेवाली बात ये भी है की ग्लोबल वार्मिंग में मिथेन गैस की हिस्सेदारी १४% है.

डम्पींग ग्राऊंड से लीक होनेवाली मिथेन गैस और दूसरे हानिकारक रसायनों से आसपास रहनेवाले लोगों की सेहत को भी बुरी तरह नुकसान पहुंचाता है. कुछ रिपोर्ट्स के मुताबिक, देवनार डम्पींग ग्राऊंड के आसपास पैदा होने वाले १००० बच्चों में से ५५ बच्चे पैदा होने के वक्त या उसके बाद मर जाते हैं. जबकी डम्पींग ग्राऊंड से दूर बसे इलाकों में शिशु मृत्युदर १०००/३५ है इसी तरह दिल्ली के गाझीपुर डम्पींग ग्राऊंड से मान्सून के दौरान १० लाख ४० हजार मिलियन लीटर जहरीले पदार्थ बह जाते हैं और ये पदार्थ ग्राऊंड वॉटर को जहरीले बनाते हैं.

अप्रैल २०१६ में सरकार ने solid waste management से जुड़े नियमों में कुछ बदलाव किए थे. इससे पहिले इन नियमों का revision सन २००० में हुआ था. नए नियमों के मुताबिक ये हर नागरिक की जिम्मेदारी है की वो अपने घर से Non-biogradable waste, biogradable waste और हजारडस वेस्ट यानि खतरनाक कुड़े को अलग अलग जमा करेगा और कुड़ा उठाने वाली एजन्सीओ को भी इसे अलग अलग करके ही सोपेगा. आपको बता दे की Non-biodegradable waste में प्लास्टीक की बॉटल और पॉलिथीन जैसी चीजे सामील होती है जबकी Biodegradable waste में बचे हुए फल सब्जीयां और बचा हुआ भोजन आता है. इसी तरह हजारडस वेस्ट वो कुड़ा होता है जिसमें केमिकल और ज्वलनशील पदार्थ होते हैं.

Waste management rule 2016 के मुताबिक इव्हेंट ऑर्गनाईझ करनेवाली कंपनियों की भी ये जिम्मेदारी है की वो अलग अलग जमा करे और संबंधीत एजन्सीयों को उसके बाद सौंप दे. इसी तरह सडक के किनारे खाने-पिने की दुकान लगाने वालों और हॉटेल और रेस्टॉरंट की भी ये जिम्मेदारी है की वो कचरे को अलग-अलग करने की व्यवस्था करे. नए नियमों के मुताबिक डायपर और सॅनेटरी नॅपकीन्स बनानेवाली कंपनियों को अपने प्रॉडक्टस् के पैक में ही ऐसे एक्स्ट्रा बॅग्स देने होंगे जिनमें इन्हें इस्तेमाल के बाद जमा किया जाएगा.

सरकार ने ठीक १ वर्ष पहले यानि अप्रैल २०१६ में नए नियमों की घोषणा की थी. लेकिन आपने ये भी गौर किया होंगा की जादातर जगहों पर अभी भी हालात पहले जैसे ही हैं. कुछ बदला नहीं है. न तो आप लोगों के घरों में कुड़ा उठानेवाले कुड़े को अलग-अलग करने की मांग करते हैं और नाही आम लोग अपना फर्ज निभाते हुए ऐसा करते हैं. शादी,

समारोह, पार्टियां, कॉन्फरन्सेस के बाद भी कुड़ा फैला दिया जाता है पर कोई इतनी जहमत नहीं उठाता की प्लास्टिक और दूसरे कुड़े को अलग-अलग किया जाए या उन्हें सही जगह पर इकट्ठा किया जाए.

नगरनिकम और मुनिसिपल कॉर्पोरेशन राजनीति में व्यस्त रहते हैं. इसलिए इनका ध्यान कुड़े की समस्या की तरफ कभी जाता ही नहीं यानी हमारे शहरों में जो कुड़े के पहाड बन रहे हैं उसमें हम सबकी हिस्सेदारी भी है और हम 9 दिन इन्हीं पहाडों के नीचे दब जाएंगे. भारत की आबादी लगातार बढ़ रही है और इसी के साथ कुड़ेकी समस्या भी बढ़ती जा रही है. हमें लगता है की देश को कुड़ेवाले प्रदूषण से बचाने की शुरुवात अपने घरसे होती है.

क्या आपको पता है ? श्रीलंका की राजधानी कोलंबो में कुड़े के एक ऐसे ही पहाड के गिर जाने से उसके नीचे दबकर 28 लोगों की मौत हो गयी. ये हादसा दिल्ली, मुंबई और देश के उन सभी शहरों के लिए एक सबक है जहाँ कुड़ा विस्तरण की व्यवस्थाए (सुविधाएं) ठीक नहीं है.

दिल्ली में फिलहाल 8 डम्पींग ग्राउंडस् हैं जो गाझीपुर, भलस्वा, ओखला, बरेला इन इलाकों में हैं. इनमें से 3 में क्षमता से जादा कुड़ा है. कुड़े की पहाड की अधिकतम उंचाई 95 मी. होनी चाहिए लेकिन गाझीपुर, भलस्वा, ओखला के कुड़े के ये पहाड बहु मंजिला इमारत जितने उंचे हैं. अगर दिल्ली और मुंबई जैसे शहर कुड़े की पहाड के नीचे दब गए तो हमारी आनेवाली पीढीयों को सिर्फ दुर्गंध, बिमारियाँ और घुटन ही नसीब होगी.

पर्यावरण मंत्रालय के मुताबिक वर्ष 2030 तक भारत में प्रतिवर्ष पैदा होनेवाली कुड़े की मात्रा 2.5 गुणा बढ़कर 96 करोड टन हो जाएगी, जबकी 2050 तक भारत में आज के मुकाबले 7 गुणा जादा कचरा होगा और इस कचरे की मात्रा होंगी 88 करोड टन.

आप सोच रहे होंगे जब भारत में इतना कचरा कुड़ा पैदा होता है तो फिर सडकों पर हर जगह कुड़े के ढेर दिखाई क्यों नहीं देते ? हालाकी कुछ जगहों पर दिखाई देते हैं, लेकिन जादातर जगहों पर नहीं दिखते. तो इसके लिए आपको कुड़ा इकट्ठा करनेवालों को 'धन्यवाद' कहना चाहिए. ये लोग न सिर्फ आपके घरका कचरा जमा करते हैं बल्की कचरे का वर्गीकरण भी करते हैं.

ये एक unorganise sector है फिर भी ये लोग बडे organise तरीके से कुड़ा और कचरा इकट्ठा करते हैं. इसलिए अब सरकार भी इन्हें संगठीत करने की योजना बना रही है. जिसके तहत इन्हें वैज्ञानिक तरिकों से कचरा उठाने की ट्रेनिंग दी जाएगी. यहाँ मैं आपको एक और जानकारी देता चाहती हूँ की आपके घरों से जो कचरा निकलता है उसे 3 तरिकों से मैनेज किया जाता है -

- 1) इस कुड़े से खाद बनाना.
- 2) उसे रि-साईकिल करना जैसे प्लास्टिक को रि-साईकिल करके फिरसे इस्तेमाल करने लायक बनाया जाता है.
- 3) इस कुड़े को ऊर्जा में बदला जाता है और उससे बिजली बनायी जाती है.

पर्यावरण मंत्रालय की वर्ष 2016 की एक रिपोर्ट के मुताबिक भारत में सिर्फ

553 - कम्पोस्ट प्लांटस्
56 - बायो-मेथानेशन प्लांटस् मौजूद हैं

जबकी,

२२ प्लांट ऐसे है जहां कुड़े से इंधन निकाला जाता है.

१३ प्लांट ऐसे है जहां कुड़े से बिजली बनायी जाती है.

सरकारने waste management से जुड़े नियमों में बदलाव तो किए है लेकिन हमें लगता है की जब तक देश के लोग और सिस्टीम साफसफाई के प्रति इमानदारी नहीं दिखाएंगे तब तक ऐसे सभी नियम और कानून कुड़े और कचरे के पहाड़ों के नीचे ऐसे ही दबे रहेंगे.

आप अपना कचरा घरसे बाहर रखे तो आपको कैसे रखना चाहिए ? कचरा ३ अलग-अलग डस्टबीन में जमा करें-

१) फल, खाना, सब्जीयाँ २) प्लास्टिक ३) केमिकल और हजारडस् वेस्ट

कु. तृप्ती उगले

एम.एस्सी. भाग-१ (गणित)

शहर गली में चर्चा है, स्वच्छ भारत अभियान की

आओ बच्चो तुम्हें बताएं
महत्त्व कचरा दान की,
बिना प्रबंधन बिमारी
फैले जो दुश्मन जान की
उचित प्रबंधन स्वाद बनाता
करता मदद किसान की,
शहर गली में चर्चा है
स्वच्छ भारत अभियान की !
कपड़े की झोली विकल्प है
पॉलीथीन की थैली की,
लहर चल रही सभी और अब
मोदी के अभियान की !
शहर-गली में चर्चा है
स्वच्छ भारत अभियान की !!
शौचालय के लाभ समझना
जरूरत हर इंसान की,
तुम्हारे कंधों पर निर्भर हैं
सफलता इस अभियान की !

कु. निकिता शर्मा
बी.एस्सी. भाग-३

अस्तित्व - एक मुकाम

रास्ते पर चलो तो सिटी नहीं बल्की सलाम निकले,
हो तुम खडे तो कोई बैठने की हिम्मत न करे;
खुद को तराशो कुछ इस तरह की,
हिरो की चमक भी फिकी लगे;
खौफ न हो तुम्हारा पर, व्यक्तित्व ही ऐसा हो;
देखकर तुम्हें तुम्हारा दुश्मन भी फक्र करे।
खुद का तुम आशिया बनाओ,
जहाँ न कोई राजा न कोई गुलाम होगा;
उस महल में तो बस राणी का राज होगा।
चाँद की तारिफ तो सब करते है,
खुद को सूरज की तरह बनाओ,
रौशनी को देखकर जिसके,
हर किसी के पसीने छुटते है।
छू लो उन उँचाईयों को कुछ इस तरह के,
वो उँचाई ही तुम्हारे नाम से जानी जाए,
हुस्न पर शायरी तो बहोत लिखते है,
कोई तुम्हारा चरित्र लिखकर बताए।
बनना ही है तो किसी की प्रेरणा बनो,
कुछ ऐसा कर के दिरवाओ की जाने जाओ,
तुम्हारे नाम से, तुम्हारे काम से;
मोहताज न बनो तुम किसी उपनाम के।

कु. केतकी क्षीरसागर
बी.एस्सी. भाग-३

सुन ! ओ बन्दे

स्वस्थ जीवन जीने के खातिर तन का इतना ध्यान करे तू,
मंदिर की तरह इसकी पूजा करके अच्छा-अच्छा खान-पान करे तू ।
सुबह सवेरे उठ अपने घर का भी ध्यान करे तू,
झाड-झूड कर, पोछ-पाछ कर सब कचरे को बाहर करे तू ।

फिर भी कर विचार ओ बन्दे

क्यों समाज पर डेरा डाले टी.बी., कैंसर बैठा है,
डेंगू, मलेरिया से रो रहा शहर का बच्चा-बच्चा है।
घर के बाहर खुली सडक पर आराम से कचरा करता है,
सब कुछ देख-देखकर भी अनदेखा किया करता है।

अपने तन और घर का ही सिर्फ तू जिम्मेवार नहीं है ।
गल्ली-मोहल्ले और शहर की सडके तुझे निहारा करती है,
मेरी भी जिम्मेदारी तेरे कंधो पर यह चीख-चीख कर कहती है।

स्वच्छता का अभियान चलाकर कर शहरों को साफ,
कचरा करनेवालों को कभी न कर तू माफ ।
गीले-सूखे कचरे का कर ऐसा प्रबंध
ना हो कोई भी प्रदूषण और ना कोई दुर्गंध ।

गीले कचरे को सडाकर कर गोबर गैस उत्पन्न
सूखे कचरे को रि-साईकल करके बचा तू अपना धन ।
कचरे का उचित प्रबंधन करके खाद तुझे बनानी है,
करके मदद किसान की जान तुझे बचानी है।

महात्मा गांधी के सपने को कर दे तू साकार,
सब बिमारियों को बाहर निकालकर, दे भारत को नया आकार।

कु. मेघा राजपाल
बी.एस्सी. भाग-३

देशभक्ति

किसी को शह और
किसी को मात दे दी है।
विधाता ने सभी को कुछ ना कुछ
तो बात दे दी है।
इसलिये मुझमे काव्य रचने
की सौगात दे दी है॥

क्षितीज तक शौर्य गुंजेगा
स्वयं दिनमान बदलेगा।
उतारो भारत माँ की आरती
सम्मान बदलेगा।
विवादों में उलझकर किर्ती
माँ की मत करो धुमिल ।
शहिदों की करो पूजा
तो हिंदुस्थान बदलेगा॥

जो आँखे देशहित जागी
वो हरगीज सो नहीं सकती।
जिस्म के खाँक होने पर भी
शोहरत सो नहीं सकती।
भले ही दौलत की ताकद से
खरीदों सारी दुनिया को।
शहादत की मगर कोई
कीमत हो नहीं सकती ॥

अगर मिट्टी के पुतले देह में
इमान जिंदा है
तभी इस देश की समृद्धि का
अरमान जिंदा है॥

संभव है श्रष्टाचारी
हक शहिदों का भी खा जाये।
कफन की कीमत लगे
और ताबुत घोटाले हो जाये।
रुहा बीच कुछ मक्कारों के
पर उनका फर्ज निभाते है॥

माँ का बेटा बनकर आया
इस दुनिया में लेकिन।
भारत माँ का बेटा बनकर
इस दुनिया से जाता है॥
देखो तिरंगा उनके तन पर
कितना सुंदर खिलता है।
ऐसा काव्य बस किस्मतवालों को
ही मिलता है॥

धन्य हुई वो मिट्टी
जिस्पर तूने जनम लिया।
शीश नवाये उस माता को
जिस्ने तुझको जनम दिया।
भैया तेरे देशभक्ति को
कोटी-कोटी प्रणाम किया,
कोटी-कोटी प्रणाम किया॥

कु. वैष्णवी भगत
बी.एस्सी. भाग-२



ठोस अवशेष कचरा

ठोस कचरा प्रबंधन के महत्व को समझे
शहरों में खुशहाली का जीवन जीए ।
पर्यावरण प्रदूषण से हम बचे
जीवन को नए ढंग से हम जीए ।
शहरों को हम स्वच्छ रखे
इस और हम सब जागरूक रहे ।
जीवन में आगे हम बढ़ते रहे
स्वच्छ भारत, नए भारत की हम सोच रखे ।
हम सब पर्यावरण प्रदूषण से बचे
खुशियों को जीवन में हम जिये ।

कु. श्रद्धा माहेश्वरी
मायक्रोबायोलॉजी विभाग

प्लास्टिक के भीषण परिणाम

नहीं जानती प्लास्टिक के वो, भीषण परिणाम मगर
कचरे-कचरे संग्रह करती, दिन-दिन फिरती डगर डगर ।
मुल्यहिन का मुल्य बनाती, प्लास्टिक पुनरावर्तन कर
नहीं चाहती प्रतिफल उसका, रहती वो गुमनाम मगर ।
पुनरावर्तन ही सृष्टी बचाये, क्या अब भी हम बेखबर ?
छोडो बाते दायित्वो की, चलो सुधारे काम कही ।
विश्वलोक में तृण जैसा पर, क्या वो योगदान नहीं
विश्वलोक में तृण जैसा पर, क्या वो योगदान नहीं ।

कु. स्युशबू ठाकरे
बी.एस्सी. भाग-१

स्वच्छ भारत अभियान, एक कदम स्वच्छता की ओर

मैं छुटा हूँ, मैं करकट हूँ,
सफाई का मैं मरकट हूँ,
मैं कोनों में कहियारों में,
दिखता रहता दीवारों पर !

मैं गंदा हूँ, मैं सडा हुआ हूँ,
डुधर-उधर पडा हुआ हूँ,
मैं पानी में खाने में,
जान के अनजाने में !

मैं काले धुअें के गुब्बार सा हूँ,
मैं बवबू के अंगार सा हूँ !
मैं सुखा हूँ गीला हूँ,
काला पिला निला सा हूँ।

मैं बाहर मस्जीद-गुरुद्वारे पे,
बाहर मुहल्ले के चौराहे पे,
मैं स्कूल में, घर में भी,
पापा-मम्मी के दफ्तर में भी !

मैं शौचालय में रहता हूँ,
नदी नालों में बहता हूँ,
जहर ने हवा में घेरा हूँ,
मैं तुम में भी हूँ भाईसा,
मैं बहोत बडी बिमारीसा !

अंत मेरा ना दिखता है,
मैं हरदम उजाले सा,
मैं तो दहशत फैलाता हूँ,
मैं तो आंतक फैलाता हूँ !

मैं तन में भी हूँ और मन में भी हूँ,
चलते-फिरते जीवन में भी,
मैं नदी के घाट किनारों पर,
हर पग-पग चौराहे पर !

मैं दिन में भी हूँ रात में भी,
इस वाली बरसात में भी,
मैं जनजीवन के साथ में भी हूँ,
मैं जनजीवन के बाद भी हूँ !

तुमने जो फैलाया मुझको,
यु ही दर दर फैलाया मुझको,
मैंने फिर भी मारी है,
जितनी हो सकती सारी दी !

तुम छुटे हो या बचचें हो,
हर उमर में हिस्सेदारी दी,
कमजोरी की फासी मैंने दी,
वो खून की फासी मैंने दी !

मैं किसी एक से ना फैला,
मेरे एक नहीं हजारों कारण हैं,
करदो मुझे जड से ही खतम,
सफाई एक निवालयन हैं !

तुम दिल्ली से हो, युपी-बिहार से,
तुम हिंदु हो, सिख हो या मुस्लिम,
तुम देश में हो या बाहर हो,
पर दिल से हिंदुस्तानी हो !

तुम पढे-लिखे हो या अनपढ हो,
तुम गाँव से हो या शहर से भी,
आलस के बस मारे हो,
लाचार और बेचार हो !

तुम जान के गलती करते हो,
तुम खुद आपस में मरते हो,
तुम अनदेखा मुझको करते हो,
तुम साफ मुझे क्यू नहीं करते हो,

तो साफ करो कचरा हररोज,
और बचालो ये संसार, संसार !!

कु. निकीता शर्मा
बी.एस्सी. भाग-3

चित्रबिंब



1st Annual Sports Meet - The B.G.E. Society, Akola



National Sports Day



Boxing - ICT, Amravati



Kabaddi - ICT Washim



Athletics - ICT, Amravati



Taekwondo - ICT, Amravati



Volleyball - ICT, Akola



Wrestling - ICT, Shegaon

चित्रबिंब



Participation of N.C.C. Cadets in 'Tree Plantation'



Participation of N.C.C. Cadets in 'Cleanliness Campaign'



Participation of N.C.C. Cadets in 'Cleanliness Campaign Rally'



Participation of N.C.C. Cadets in 'Rojgar Melawa'



Participation of N.C.C. Cadets in 'Aids Day Rally'



Participation of N.C.C. Cadets in 'Hot Air Balloon Camp'



Participation of N.C.C. Cadets in 'Blood Donation'



Participation of N.C.C. Cadets in Guest Lecture on 'Swachhata The Way Ahead'



English Section

Waste Disposal Management

Though waste disposal has been a matter of concern for several decades, the main problem has been taking massive proportions due to growth in population and industrialization, the two major factors that contribute to waste generation. Though some advancement is being made in waste disposal methods, they are still not adequate. The challenge is to detect newer and unhazardous methods of waste disposal and put these methods to use.

Five effective waste disposal methods.

1. Preventing or reducing waste generation : Extensive use of new or unnecessary products is the root cause of unchecked waste formation. The rapid population growth makes it imperative to use secondhand products or judiciously use the existing ones because if not, there is a potential risk of people succumbing to the ill effects of toxic wastes. Disposing of the wastes will also assume formidable shape. A conscious decision should be made at the personal and professional level to judiciously curb the menacing growth of wastes.

2. Recycling : Recycling serves to transform the wastes into products of their own genre through industrial processing. Paper, glass, aluminum, and plastics are commonly recycled. It is environmentally friendly to reuse the wastes instead of adding them to nature. However, processing technologies are pretty expensive.

3. Incineration : Incineration features combustion of wastes to transform them into base components, with the generated heat being trapped for deriving energy. Assorted gases and inert ash are common by-products. Pollution is caused by varied degrees dependent on nature of waste combusted and incinerator design. Use of filters can check pollution. It is rather inexpensive to burn wastes and the waste volume is reduced by about 90%. Hazardous and toxic wastes can be easily be rid of by using this method. The energy extracted can be used for cooking, heating, and supplying power to turbines.

4. Composting : It involves decomposition of organic wastes by microbes by allowing the waste to stay accumulated in a pit for a long period of time. The nutrient rich compost can be used as plant manure. However, the process is slow and consumes a significant amount of land. Biological reprocessing tremendously improves the fertility of the soil.

5. Sanitary Landfill : This involves the dumping of wastes into a landfill. The base is prepared of a protective lining, which serves as a barrier between wastes and ground water, and prevents the separation of toxic chemicals into the water zone. Waste layers are subjected to compaction and subsequently coated with an earth layer. Soil that is non-porous is preferred to mitigate the vulnerability of accidental leakage of toxic chemicals. Landfills should be created in places with low groundwater level and far from sources of flooding. However, a sufficient number of skilled manpower is required to maintain sanitary landfills.

Effective waste disposal calls for concerted efforts from all, no matter how anxious or worried they may be about our environment.

Re-script by
Dr. Sushil M. Nagrale
Assistant Professor and Head
Department of Zoology

Waste Management - Concepts and Techniques

Waste management means management of all the activities of handling waste i.e. from collecting waste to transporting it to its final destination for disposal. Waste management is the overall process of collection, transportation, treatment and discarding of waste products, sewage and garbage. It also includes other legal, monitoring, recycling and regulating activities.

Waste management which is a very massive task is getting more complicated with rise in urbanization, overpopulation, commercialization, social and economic growth, etc. Institutional fragility, financial constraints and public attitude towards waste management has made the issue even worse. Large segment of waste management deals with municipal solid waste i.e. the waste created by industries, housing and commercial establishments. We are generating waste on a faster pace than the disposal of waste is carried out.

In India, waste management system has failed to keep pace with social and economic development in several regions. The inefficiency in management of municipal solid waste can adversely affect public health, environment and our economy. Waste management is essential for the healthy functioning of human and environment. Efficient waste management will lead us to safe and healthy environment.

Different concepts of waste management

- 1. Waste hierarchy** - The hierarchy of waste management includes reducing, reusing and recycling of waste. The most important is to reduce followed by the reuse and recycle.
 - **Reduce** - Not to create waste i.e. to avoid over consumption of goods and services, using eco-friendly products and saving energy is the most preferred approach. It also includes reduction in the inputs that go into production process, production of durable goods, use of eco-friendly technology, hybrid transport, packaging reduction, energy conservation and use of renewable energy sources.
 - **Reuse** - To reduce waste, reuse is another useful approach. It includes reusing packaging systems that can help in reducing disposable waste and use of second hand products.
 - **Recycling** - In this process, the used products are recycled and can be used in the production of new products. Recycling of the products provides raw materials that are energy efficient, cost effective, less polluting and avoids the consumption of new raw materials.
- 2. Life cycle of a product** - The life cycle of a product includes policy intervention, rethinking the need of product, redesigning to minimize waste and production of durable goods. Its main purpose is to use the resources to the maximum to avoid unnecessary waste.

- **Resource efficiency** - It is the reduction of negative impact on our environment from the production and consumption of goods. Reducing the use of energy associated in packaging and transport of goods by reusing the products. We are wasting our resources by wasting food, e-waste and wasting water.
- **Polluter pays principle** - In this principle, the polluter party i.e. waste generator pays for the impact caused to environment.

Common techniques of waste management :

- **Landfills** - The most common technique of waste disposal is the throwing away waste and garbage in landfills. In this process, the odours and dangers of the garbage are eliminated. The garbage is then buried on the landfill sites. Landfills are also the cause of global warming which is why many countries are reconsidering the use of landfills.
- **Incineration** - It is the process in which municipal solid wastes are buried to convert them into residue, heat, ash, steam and gases. It reduces the volume of solid waste by about 30%.
- **Recycling** - In this process, discarded items are recycled for reuse. The waste materials are recycled to extract resources or convert into energies in the form of electricity, heat or fuel.
- **Composting** - This is the bio-degradation in which organic waste i.e. remains of plants and kitchen waste are converted into nutrient rich food for plants. Composting is the method used for organic farming that improves fertility of soil.
- **Anaerobic digestion** - This is the method in which organic materials are decomposed through biological processes. It uses oxygen and bacteria free environment. Composting requires air to aid the growth of microbes.
- **Waste to energy** - This is the method used to convert non-recyclable waste into energy sources like heat, fuel or electricity. This is the renewable source of energy as non-recyclable waste can be used to create energy again and again.
- **Waste minimization** - The simplest way of waste management is to create less waste. Waste reduction can be done reducing the waste creation, recycling and reusing the old materials. Using eco-friendly products and reducing the use of plastic, paper etc. is vital.
- **Gasification and pyrolysis** - These are the methods used to decompose organic waste materials by exposing it to low amount of oxygen and high temperature. In gasification, very low amount of oxygen is used whereas in pyrolysis, oxygen is not used at all. As no air pollution is created to recover energy by burning process, gasification is the most advantageous process.

Major factors influencing solid waste in India :

- **Over population** - Increase in population results in increase in solid municipal waste. High population leads to increasing demand of basic resources which leads to waste generation.
- **Urbanization** - Migration from rural areas to enjoy the benefits of urban economic and social growth results in urbanization. Industrialization in urban areas produces large amount of waste in the process of production of goods and disposal of goods after use causing waste. Overcrowding has overwhelmed the capacity of municipal authorities of many cities, to manage waste.
- **Luxurious Life** - The need of luxury products have increased immensely to lead a comfortable and luxurious life regardless of whether it is needed or not, which results in more waste generation.
- **E-waste** - With advancement of technology, the demand for new technology increases e.g. computers, laptops, mobiles, TV's, play stations, refrigerators, electronic equipments etc. As a result old gadgets and electronics become trash.

Irresponsible discarding of waste and not considering its negative impact on environment and others is wrong. We all are a part of nature and it's our duty to prevent nature from the hazardous effects of waste. As managing waste is a massive process it begins by keeping your surroundings clean and the rest will be taken care of by waste management units.

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E-Waste Management System

E-waste :

Electronic waste describes discarded electrical or electronic devices. The used electronics which are destined for reuse, resale, salvage, recycling or disposal are also considered as e-waste. Informal processing of electronic waste in developing countries may cause serious health and pollution problems, though these countries are also most likely to reuse and repair electronics. The production of electrical and electronic equipment (EEE) is one of the fastest growing global manufacturing activities. Rapid economic growth, coupled with urbanization and a growing demand for consumer goods, has increased both the consumption and the production of EEE. Computers, servers, mainframes, monitors, CDs, printers, scanners, copiers, calculators, fax machines, battery cells, cellular phones, transceivers, TVs, iPods, medical apparatus, washing machines, refrigerators and air-conditioners are examples of e-waste.

Life cycle of the e-waste :

Producers/manufacturers, retailers, consumers, traders, exporters, scrapdealers, disassemblers/dismantlers, smelters and recyclers are major stakeholders in e-waste supply chain..E-waste, is an emerging problem as well as a business opportunity of increasing significance, given the volumes of E-waste being generated and the content of both toxic and valuable materials in them. The fraction including iron, copper, aluminum, gold and other metals in E-waste is over 60%, while pollutants comprise 2.70%

Impact of e-waste :

Electronic equipments contain many hazardous metallic contaminants such as lead, cadmium, and beryllium and brominated flame-retardants. The fraction including iron, copper, aluminum, gold, and other metals in e-waste is over 60%, while plastics account for about 30% and the hazardous pollutants comprise only about 2.70%. Of many toxic heavy metals, lead is the most widely used in electronic devices for various purposes, resulting in a variety of health hazards due to environmental contamination. This was due to that fact that the processes and techniques used during the recycling activities were very primitive.

Various e-waste sources, their constituents, and health impacts.

E-waste sources	Constituents	Health effects
Solder in printed circuit boards, glass panels, and gaskets in computer monitors	Lead	Damage to central and peripheral nervous systems, blood systems, and kidney damage
		Adverse effects on brain development of children; causes damage to the circulatory system and kidney
Chip resistors and semi-conductors	Cadmium	Toxic irreversible effects on human health
		Accumulates in kidney and liver
		Causes neural damage

Relays and switches, and printed circuit boards	Mercury	Chronic damage to the brain
		Respiratory and skin disorders due to bioaccumulation in fishes
Galvanized steel plates and decorator or hardener for steel housing	Chromium	Causes bronchitis
Cabling and computer housing	Plastics and PVC	Burning produces dioxin that causes reproductive and developmental problems
Electronic equipment and circuit boards	Brominated flame-retardants	Disrupt endocrine system functions
Front panels of CRTs	Barium, phosphorus, and heavy metals	Cause muscle weakness and damage to heart, liver, and spleen
Copper wires, Printed circuit board tracks.	Copper	Stomach cramps, nausea, liver damage, or Wilson's disease
Nickel-cadmium rechargeable batteries	Nickel	Allergy of the skin to nickel results in dermatitis while allergy of the lung to nickel results in asthma
Lithium-ion battery nursing baby	Lithium	Lithium can pass into breast milk and may harm a
		Inhalation of the substance may cause lung edema
Motherboard	Beryllium	Carcinogenic (lung cancer)
		Inhalation of fumes and dust causes chronic beryllium disease or berylliosis

E-waste management: Current scenario

E-waste recycling market in India is predominantly controlled by unorganized sector due to absence of stringent laws and policy framework. Electronics products in the country are reaching their end of life sooner than expected, which has created immense pressure on the government to come up with appropriate laws to promote eWaste recycling and management.

It is estimated that 50 million tonne of e-waste will be generated globally in 2018. Half of this is personal devices such as computers, screens, smartphones, tablets and TVs, with the remainder being larger household appliances and heating and cooling equipment. Out of this, only 20 per cent of global e-waste is recycled each year, which means that 40 million tonnes of e-waste is either placed in landfill, burned or illegally traded and treated in a sub-standard way. This is despite 66 per cent of the world's population being covered by e-waste legislation.

However, a few independent studies suggest that the generation of e-waste could be much higher. The *Global E-Waste Monitor, 2017* published by the United Nations University estimated that India generates about 2 million metric tonnes of e-waste (2016) annually. Nearly 82% of this is personal devices.

India's annual electronic waste (e-waste) generation was 1.8 million MTs in 2016 and is expected to reach 5.2 million MTs by 2020. Mumbai stands first among the top ten Indian cities generating e-waste, followed by Delhi, Bengaluru, Chennai, Kolkata, Ahmedabad, Hyderabad, Pune, Surat and Nagpur. The government, public and private sectors act as the primary source of e-waste, accounting for 70 per cent. Individual households contribute only 15 per cent. The balance 15 per cent is produced by manufacturers. India is ranked 5th in the world among top e-waste producing countries-USA, China, Japan and Germany. "The large increase (in total e-waste generation of the world) was mainly attributed to India," said the report. An ASSOCHAM-KPMG study, *Electronic Waste Management in India* identified computer equipment account for almost 70 per cent of e-waste, followed by telecommunication equipment-phones (12 per cent), electrical equipment (8 per cent) and medical equipment (7 per cent) with remaining from household e-waste.

On 1 October 2016, the newly launched E-waste (Management) Rules 2016 replaced the existing E-waste (Management and Handling) Rules, 2011. The concept of Extended Producer Responsibility (EPR) mandated producers of electrical and electronic equipment to register and specified targets to collect back e-waste generated and to ensure that it is channelized to authorized recyclers. In March 2018, the E-waste (Management) Amended Rules reduced the target to 10 per cent for 2016-17 (as against 20 per cent), 20 per cent for 2017-18 (remains same). This target progressively goes up to 70 per cent in the seventh year.

The penalty and punishment for non-compliance were the same as sections 15, 16 of the Environment (Protection) Act, 1986. The sections specify an imprisonment term that may extend to five years or a fine which may extend to Rs 1 lakh would be the penalty for non-compliance.

Future Solution :

The generation of e-waste in large quantities in recent years poses a serious threat to the environment and human health. First and foremost, inventorisation of the e-waste produced annually should be done by engaging an established **government agency**. Only then can suitable steps can be planned for recycling and disposal of e-waste in an organized manner.

Awareness is key both for the **stakeholders** and **consumers**. Consumers also should understand certain particulars. When they buy any electrical/electronic product, it may be somewhat expensive. However, after certain years of use, its lifetime may expire. At that time, it is better to dispose of them properly by selling such products to the organized sector.

Few Important steps should be followed :

- Donate or Sell Working Electronics
- Use Your Old Mobile Phone(devices) as a GPS Device, **monitor security cameras**, universal remote controls (alternative purposes).
- Check E-Cycling Centers in Your State
- Know Your State's Laws About Battery Disposal

Rechargeable batteries contain hazardous waste which is why some states have made it illegal to throw them away in the trash. The good news is that these types of batteries contain lead, plastic, and metal which can be easily recycled.

- Consume Less
It's so easy to purchase a sleek TV, the latest mobile phone or a brand-new laptop. Most people don't even stop to think if they really need them.
- Store Your Data Online
Why use a memory stick or device when you can now easily store significant amounts of data on the Internet? There are many different types of clouds storage available online such as Dropbox, Google Drive, and IDrive.
- Buy Energy Star Rated Appliances
Energy Star appliances are not only environment-friendly but consume less electricity thereby saving money on your electric bill.
- Educate people on the Materials Used in Electronics

Concept of Green Computing :

Green computing, or green IT, aims to attain economic viability and improve the way computing devices are used. Green IT practices include the development of environmentally sustainable production practices, energy efficient computers and improved disposal and recycling procedures. To promote green computing concepts at all possible levels, the following four complementary approaches are employed:

- **Green use** : Minimizing the electricity consumption of computers and their peripheral devices and using them in an eco-friendly manner.
- **Green disposal** : Re-making an existing computer or appropriately disposing of, or recycling, unwanted electronic equipment.
- **Green design** : Designing energy-efficient computers, servers, printers, projectors and other digital devices.
- **Green manufacturing** : Minimizing waste during the manufacturing of computers and other subsystems to reduce the environmental impact of these activities.

Conclusion :

With the technology development of consumer electronics, the whole world is facing serious problems caused by high e-Waste flow produced every day. India has already become the 2nd largest supplier of consumer electronic in the world and will become the number 1 in the next few years, Government is working hard to help the recyclers and organization to dealing with e-Waste Problems. To promote green computing concepts at all possible levels.

Awareness programmes need to be conducted to make the public understand the real health problems caused by untreated e-waste and the value of the components, and guide them to dispose the e-waste properly, through an authorized sector only. With the Indian government promoting the "Swachh Bharat" programme the country must be kept free of any untreated e-waste also.

Prof. R.B. Ghayalkar
Assistant Professor
Department of Computer Science

Solid Waste Management

Solid waste management is the collection, treatment and disposal of solid materials that are discarded by purpose or no longer useful. Improper disposal of solid waste result in unsanitary conditions which lead to pollution and spreads various infections and diseases.

Solid waste management is one of the major challenges faced by many countries around the globe. Inadequate collection recycling or treatment and uncontrolled disposal of waste in dumps can lead to severe hazards, such as health risks and environmental pollution.

In this case, Ghana is not an exception and for that matter Tamale Metropolitan Area (TAMA). This topic came to light when I viewed a documentary on Metro television vision coupled with frequent news publications. Radio and television discussions on solid waste situation in the Aerea Metropolitan Area (AMA). Upon viewing the clip and listening to the discussions, a quick survey was done to assess the situation in TAMA. The observation confirmed that the situation though not as huge as the one in AMA; was emerging since Tamale is a growing city. Therefore, the next section states the problem of solid waste management in TAMA.

Over the years, solid waste disposal has become a major problem in the Tamale Metropolitan Area (TAMA). Therefore, indiscriminate dumping, irregular collection of waste generated and inadequate resources are the key problems facing solid waste management in the Metropolis. In the Metropolis, it is estimated that 810 tones of waste is generated a day and out of this, 216 tones are hauled daily, this leaves a backlog of 594 tones uncollected a day.

This has resulted in littering, heaping of waste and overflowing of skips with waste in the Metropolis most especially in the low class residential and peri-urban areas. The recent proliferation of polythene bags for packaging has seriously aggravated the situation in the study area. This makes the above mentioned residential areas filthy and unattractive for living. Therefore if the situation is left unchecked it can result in the out break of communicable diseases such as cholera, typhoid and this will affect people exposed to this unsanitary conditions. On the basis of this, the study intends to examine the problem enumerated above in TAMA in the northern region.

Therefore, the research seeks to establish the causes of this problem by answering the following questions.

Ms. Alfiya Fatema K. Hafizuddin
B.Sc.-I

Importance of Solid Waste Management

India has a lot of population near about 130 crore. This population need lot of things. And that increasing demand produce waste. Millions of tons of waste generated per day from each city which is disposed in dumping ground out of the city.

Increasing population give rise to the pollution of atmosphere. Population increases rapidly and it expand out of the city upto the dumping ground. Also in slum areas there is lot of dirtiness which causes infections diseases that can cause harm to human health. The unprocessed disposed waste produces toxic gases which is hazardous to human health. If this waste get mixed in water or in rainwater it can produce lot of diseases in local area.

So to overcome this problem one should try to take care of our environment and proper disposal and processing on solid waste is mandatory. Some solid waste can recycle or reuse so one should do it. Also avoiding overuse of plastic can support the mission of solid waste management. In such a way that saving the life of animals such as cow, buffalo; these animals eat the food along with plastic which is wrapped in it and can cause harm to their health. In order to protect them one should avoid overuse of plastic bags.

So we have to do proper management of solid waste. We should practise to segregate waste in wet waste and dry waste. Wet waste such as kitchen waste can disposed in open space of our home and can create biogas plant. This produce energy from waste product. It is a energy saving process. Remaining waste can use as a manure in farm or in garden.

Plastic, paper, metal and such many things can be recycled in order to produce new things. Therefore this method should used by us it helps us in solid waste management. We can also try to use tenewable resources they are in favour of nature. It also reduces pollution. As a citizen it is our responsibility to save our environment by using natural resources in proper manner and always be aware about personal health, public health and health of our environment.

Now-a-days e-waste is produced in lot of number. E-waste is a electronic waste which is produce by irreparable technological products. But proper use of collection of useful part in e-waste can reduce the waste. The 'Waste makes Best' principle can work in the case of e-waste. So proper utilization and disposal can solve that severe problem faced by Indian people. Disposal of waste in dumping ground decreases the fertility of soil. It affect the soil totally and soil become infertile. So we should try to find out other alternative for dumping the waste.

For overcoming this problem we should organize programmes for human awareness about proper management of solid waste such as 'Swachh Bharat Abhiyan' held by our honourable prime minister 'Mr. Narendra Modi'. It is very inspirable project which works in cleaning our India. The main prupose of that project is to clean our nation along with the healthy people. The wealth of nation depends on the wealth of nation. So by giving our contribution in this project we should take care of our environment. It is our responsibility to check that no one kind of species is harmed. So we take care that dumping area should in unhuman place and it can't harm wild animals. It is now need to pay attention of every person towards the environmental factors. In this way we can give our contribution to nation in which we live.

Ms. Radha Sawarkar
B.Sc.-I

Need of Solid Waste Management

Solid waste means any garbage, refused, sludge from a waste water treatment plant, water supply treatment plant or air pollution control facility and other discarded material including solid, liquid, semi-solid or contained gaseous material, resulting from industrial, commercial, mining and agricultural operations.

Solid waste management :- These are the activities and actions to manage waste from its inception to its final disposal. These include the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the solid waste management process. Waste management deals with all types of waste including industrial, biological and household. The waste management is intended to reduce the adverse effect of waste on human health, the environment or aesthetics. The main causes of increase in solid waste are population growth, increase in industrial manufacturing, urbanization, modernization.

Modernization, technological advancement and increase in global population created rising demand for food and other essentials. This has resulted in a rise in the amount of waste being generated daily by each household. The solid waste management sector offers opportunities for private entrepreneurship, resource conservation and inclusiveness for marginalized populations; however, it also presents significant challenges in terms of technical, financial and institutional capacities. When sector enabling conditions are not in place, waste is mismanaged, contaminating water bodies, clogging drains, causing flooding and increasing diseases, all of which have significant environmental and economic costs for governments and societies. It is predicted that by 2050, waste generation is projected to increase by 70 percent and drastically outpace population growth by more than double.

Adverse effect on living organisms due to solid waste :- The groups at risk from the unscientific disposal of solid waste include the population in areas where there is no proper waste disposal method, especially pre-school children, waste workers, workers in facilities producing toxic and infectious material. Other high risk groups include populations living close to a waste dump and those whose water supply has become contaminated either due to waste dumping or leakage from land fill sites.

Uncontrolled hazardous wastes from industries mixing up with municipal wastes create potential risks to human health. Traffic accidents can result from toxic spilled wastes. There is a specific danger of concentration of heavy metals in the food chain, a problem that illustrates the relationship between municipal solid waste and liquid industrial effluents containing heavy metals. Solid waste can cause several diseases related to congenital malformations, neurological diseases etc.

Impact of solid waste on environment :- The decomposition of waste into constituent chemicals is a common source of local environmental pollution. A major environmental concern is gas released by decomposing garbage. Methane is a by-product of the anaerobic respiration of bacteria and these bacteria thrive in landfills with high amounts of moisture. The problem with these gases is also that they contribute to the enhancing of greenhouse gas effect and climate change.

The plastic waste has been making headlines for years due to its negative impact on the environment and human health which is becoming increasingly evident. In South African countries like Soweto, leakage of plastic into natural ecosystems often originates from poor basic waste management systems. In Kingston, Jamaica, waste can get stuck in canals or accumulate in waterways when openly dumped. To cope up with these, they are collecting their plastic bottles and other waste materials to create

new product. In Japan source separation of plastic is a core component of its proper waste management, then they manufacture this into variety of new products.

In India, Municipal Solid Waste Management (MSWM) is one of the major environmental problem of Indian cities. Improper management of municipal solid waste (MSW) is disposed of unscientifically in open dumps and landfills creating problems to public health and the environment. The study pertaining to MSWM for Indian cities has been carried out to evaluate the current status and identify the major problems. The study is concluded with a few fruitful suggestions.

Waste handling practices :- Curbside collection is the most common method of disposal in most European countries, Canada, New Zealand etc. And this practice is implemented in many Indian metropolitan cities in India also. The waste collected is then transported to an appropriate disposal facility.

Incineration is a disposal method in which solid organic waste are subjected to combustion so as to convert them into residue and gaseous products. This method is useful for disposal of both municipal solid waste and solid residue from waste water treatment. It can be carried out both on a small scale by individuals and on a large scale by industry.

Conclusion :- The focus of the study was on impact of solid waste due to non engineering and non scientific disposal. It is found that with increase in the global population, there has been rise in the amount of waste being generated. To cop with this and to do progress we have to stop and think a little bit more on the same issue, to protect our environment and our "lives" and for that we should understand.

"Progress is impossible without change, and those who cannot change their minds cannot change anything".

Mr. Harshal Bais
B.Sc.-III

Poem

*Solid Waste Management, became our goal
This point became, valuable to our soul
Due to solid goods, development in India increases
Produced waste, by management decreases
Reduce Reuse Recycle, are we know
To avoid Global warming, it is essential so
We must start now, we can't wait
quick or it will be too late
Each early change simply for fashion
Now modify your expectation
And we can save this green planet
It starts with you and me.*

Ms. Arti Gole
B.Sc.-I

Solid Waste Management Strategy

A harmonious and balanced relationship between nature and living beings specially human beings, on this earth is absolutely necessary for a continued sustenance and development of both in this world. As civilization advanced, man directly or indirectly, consciously or unconsciously and sometimes deliberately, interfered with the natural environment. This created a huge imbalance in man-nature relationship, leading to a lot of environmental problems.

Most noticeable environmental problems are : air pollution, water pollution and accumulation of Solid Waste. The much praised industrial revolution paved the way for rapid urbanization, gradual depletion of natural wealth / resources, tilting the geophysical and ecological balance of the earth and frequent occurrence of natural calamities, polluting air, water and soil and unprecedented piling / accumulation of industrial and urban solid waste.

Waste management are the activities and actions required to manage waste from its inception to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process. Waste management practices are not uniform among countries; regions and residential and industrial sectors can all take different approaches.

A large portion of waste management practice deals with Municipal Solid Waste (MSW) which is the bulk of the waste that is created by household, industrial and commercial activity.

Waste hierarchy :-

The waste hierarchy refers to the "3 Rs" Reduce, Reuse, Recycle, which classifies waste management strategies according to their desirability in terms of waste management. The waste hierarchy is the cornerstone of most waste minimisation strategies. The aim of the waste hierarchy is to extract the maximum practice benefits from products and to generate the minimum amount of end waste. The waste hierarchy is represented as a pyramid because the basic premise is that policies should promote measures to prevent the generation of waste.

Waste handling practices :-

Curbside collection is the most common method of disposal in most European countries, Canada, New Zealand and many other parts of the developed world in which waste is collected at regular intervals by specialised trucks. This is often associated with curb-side waste segregation. In rural areas waste may need to be taken to transfer station. Waste collected is then transported to an appropriate disposal facility. In some areas, vacuum collection is used in which waste is transported from the home or commercial premises by vacuum along small bore tubes systems are in use in Europe and North America.

Disposal methods :-

Incineration :- Incineration is a disposal method in which solid organic wastes are subjected to combustion so as to convert them into residue and gaseous products. This method is useful for disposal of both municipal solid waste and solid residue from waste management.

Recycling :- Recycling is a resource recovery practice that refers to the collection and reuse of waste

materials such as empty beverage containers. In some communities, the owner of the waste is required to separate the materials into different bins.

Re-use :- Recoverable materials that are organic in nature, such as plant material, food scraps, and paper products, can be recovered through composting and digestion process to decompose the organic matter.

Energy recovery :-

Energy recovery from waste is the conversion of non-recyclable waste materials into usable heat, electricity, or fuel through a variety of processes including combustion, gasification, pyrolyzation, anaerobic digestion and land fill recovery.

Sustainability :- The management of waste is a key component in a business ability to maintain ISO 14001 accreditation. The standard encourages companies to improve their environmental efficiencies each year by eliminating waste through resource recovery practices.

Zero Waste :- Zero waste is a philosophy that encourages the redesign of resources life cycles so that all products are reused.

Ms. Vaishnavi Deshmukh
B.Sc.-I

Waste Management

Cleanliness of the world of necessity,
Waste Management in scientific terms
Water sources kept as scared and clean..
A great necessity of the time and Tomorrow...!!

Plastic Waste a big concern and problem,
Where it is thrown in such callousness,
Never in friendships of earthly acceptance
Recycling, Reprocessing and other sources,
Management of plastic waste a must...!!

Wonderful world, beautiful nature
The earth itself gives us all in kindness,
We have to bother to maintain, cleanliness...
Where human concern of waste management...!!

A time of necessity in health factors.
E-wastes a likely problem of tomorrow,
May scientific advancement find the solution..
Living in such comforts of computers,
Air Conditioners and such modern amenities...
Waste a problem to be managed everywhere...!!

Ms. Nikita Sharma
B.Sc.-III

Solid Waste Management for Better Future

We humans are gifted with a pros of a beautiful life and amazing nature wrapped with the cons of waste. Of course this wrap was chosen by us ! Yes, this trending problem which we humans are facing worldwide is possessing the name of "Solid Waste" and the strategy used for minimizing this issue is called as 'Solid Waste Management'.

Solid wastes are all the discarded solid material from municipal, industrial and even agricultural activities. The major objective of solid waste management (SWM) is to control, collect, process and utilize and dispose solid wastes in an economical way, consistent with the public health protection. While most of the focus in waste management is on solid waste management, it is important to note that SMW is the small fraction of the total amount of waste generated. The resource conservation and recovery Act (RCRA) delineate two categories of waste i.e. hazardous and non-hazardous waste. In comparison to these two, hazardous waste procues a severe impact on the human health causing dangerous effect.

Talking about sources and classification, the solid waste is a source of pollution that comes in importance after water pollution and air pollution. The principle sources of solid waste are domestic, residential, commercial, industrial and even agricultural. On an average, the solid waste quantity generated only by households can be 0.47 kg/capita per day or 1.50 lt/capita per day.

Solid waste is a combination of heterogenous mixture of paper, plastic, cloth, metal, glass, organic matter etc. generated from households. Wastes from hospital and nursing homes are needed to be collected and treated seperately because it contains infectious items i.e. amputated body parts, body fluids, culture of pathogens, needles, bandages etc. Hazardous wastes are either toxic to plants and animals or are flammable, corrosive, explosive or highly reactive. Examples of such hazards are cynide waste, asbestos, acidic or alkaline slurrys, metals, chemicals, drugs, dyes, rubber goods etc. The increasing scale of economic activity in terms of rapid industrialization, commercialization, urbanization and population growth in developing countries has inevitably led to drastic increase in the wastes.

Every single individual on this planet is responsible for generation of waste. Waste is been produced at the drop of hat ! This waste if it is not handeled properly can produce landfills. In a country like India, if we take a look at the current system of waste, we find that it is only managed by government entities or by selective private organizations. There is no acceptance at individual level because we conventional people partonize at assistance ! But what if each individual collectively play a role in managing this waste ? The saying - 'For the strength of pack lies in its wolves and strength of wolves lies in its pack' goes absolutely perfect here.

Reduce, Reuse & Recycle phenomenon should be brought into use to minimize the load of waste. Paper waste must be brought into a major control. Another way to reduce it is to decrease packaging waste, packaging produces heck of scrap than any other ! Composting at home is also a good way to deal. Citizens of every community can do many activities to work together to deal with this problem because sooner or later everyone has to sit down on the banquet of their consequences ! So why not we start at earliest ?

We all can collectively work in co-ordination to step down this problem. It will take time but remember even Rome was not built in a day ! This is hard, but not impossible. Our unity can take

us to higher achievements. Its only under our will to make this difference happen. Lets consider this as the darkest hour before the down and produce a brighter future and a healthy earth to live in.

Nature is painting for us, day after day
Pictures of infinite beauty....
Progress is impossible without change
So lets not thrash our future !

Ms. Vaibhavi Tople
B.Sc.-I

Solid Waste Management

"I only full angry when I see waste. When I see people throwing away thing we could use". No matter what industry you're in, from manufacturing or medical to agricultural or energy production, you produce waste. As long as people have been living in settlements and residential areas, garbage or solid waste has been an issue. For developing countries like India, Industrialization becomes very significant, having large number of population. Rapid increase in urbanization and per pcapita income had to high rate of solid waste generation. Solid wastes includes household garbage and rubbish, street sweeping, construction and demolition debrio, sanitation residues, trade and non-hazardous industrial refuse. These waste may cause a potential hazard to human health or environment if any of the aspects of solid waste management is not managed effectively. Waste management is all about how solid waste can be changed and used as a valuable resource. In India, approach towards solid waste amangement is still unscientific.

In India, solid waste collection efficiency is around 70% while same is almost 100% in the developed countries. Even today, large portion of solid waste is dumped indiscriminately an outsprints of towns or cities without any prior treatment. This bads to groundwater contamination and increase in air pollution due to release of gases that are harmful. Various study reveals that out of total solid waste, 80% can be utilized again either by recycling or reusing. Plastic and paper recycling have been especially growing due to continous increasing consumption of both the commodities. Indian cities are generating eight times more than they did in 1947. Expected generation of solid waste until 2025 in India is 700 gram per capita per day.

Solid waste management can be done by recovery and recycling, composting and Lyrolysis. Recycling or recovery of resources is the process of taking useful but discanded items for next use. Traditionally, these items are processed and cleaned before they are recycled. Biodegradable waste materials are used in comosting, pyrolysis is the method of solid waste management whereby solid waste are chemically decomposed by heat without presence of oxygen. The solid wastes are changed into gasses, solid residue and small quantities of liquid.

Solid waste management should be embraced by each and every household including the business owners around the world. It is an integral part of environmental conservation that should be observed by individuals and companies globally. This will keep the environment clean and reduce health and settlement problems.

Ms. Monal Tayade
B.Sc.-III

Solid Waste Management Study

Introduction :-

Solid waste means any garbage, refuse, sludge from a waste water treatment plant, water supply treatment plant or air pollution control facility and other discarded materials including solid, liquid, semi-solid or contained gaseous material, resulting from industrial, commercial, mining and agriculture and community activities. Solid waste in general can be defined as 'As a material which has negligible value to the producer and there is no direct consumption of the generated waste.'

- Municipal Solid Waste (MSW)
Solid waste from home or office.
- Industrial Solid Waste (ISW)
Solid waste produced from mine, agriculture or industry.

Whatever the origin, content or hard potential is solid waste must be managed systematically to ensure environmental best practices.

Solid Waste Management is defined as the discipline associated with control of generation, storage, collection, transport or transfer, processing and disposal of solid waste materials in a way that best addresses the range of public health, conservation, economics, aesthetic, engineering and legal functions. In its scope, solid waste management including planning, administrative, financial, engineering and other environmental considerations. Solution might include complex inter-disciplinary relations among fields such as public health, city and regional planning, political science, geography, sociology, economics, communication and conservation, demography, engineering and material sciences.

Convert the waste to wealth,
Don't convert the wealth to waste,
Waste is misplaced resource
& unrecognized wealth.

As long as people have been living in settlement and residential areas, garbage or solid waste has been living an issue. Waste management is all about how solid waste can be changed and used as a valuable resource. Solid waste management should be embraced by each and every household including the business owners across the world. Industrialization has brought a lot of good things and bad things as well. One of the negative effects of industrialization is the creation of solid waste. Everyday, tonnes of solid waste is disposed off at various landfill sites. This waste comes from the homes, offices, industries and various other agricultural related activities. This landfill sites produce foul smell if waste is not stored and treated properly. It can pollute the surrounding air and can seriously affect the health of humans, wildlife and our environment. Residences and homes where people live are some of the major sources of solid waste. Garbage from these places include food wastes, plastic, paper, glass, leather, cardboard, metals, yard wastes and ashes, special waste like electronics, tires, batteries, old mattresses and used oil.

AMAZING FACTS :

- About one-third of an average dumps is made up of packaging material.
- Every year, each American throws out about 1,200 pounds of organic garbage that can be composted.
- The U.S. is the #1 trash-producing country in

the world at 1.609 pounds per person per year. This means that 5% of the world's people generate 40% of the world's waste.

- The highest point in Hamilton country, ohio is "Mount Rumpke". It is actually a mountain of trash at the Rumpke sanitary landfill towering 1045 ft. above sea level.
- On average, it costs \$30 per ton to recycle trash, \$50 to send it to the landfill, and \$65 to \$75 to incinerate it.

METHOD OF SOLID WATER DISPOSAL MANAGEMENT

1) SANITARY LANDFILLING OF SOLID WASTE

Simple, cheap and effective. A deep trench is excavated. Refuse is laid in layers, layers are compacted with some mechanical equipment and covered with earth, leveled and compacted with time, the fill would settle. Micro-organism act on the organic matter and degrade them. Decomposition is similar to that in composting. Facultative bacteria hydrolyze complex organic matter into simplex water soluble organics. Refuse depth more than 3 m danger of combustion due to compression of bottom layers - hence should be avoided. Reclaimed areas used for other uses.

2) ENGINEERED LANDFILLS OF SOLID WASTE

Bottom of the trench is lined with impervious material to prevent the leachate from contaminating groundwater. A well designed and laid out leachate collection mechanism is to be provided. Leachate so collected is treated and then disposed off.

INCINERATION OF SOLID WASTE :

A method suited for combustile refuse. Refuse is burnt. Suited in crowded cities where sites for land filling are not available. High construction and operation costs. Sometime used

to reduce the volume of solid wastes for land filling. Primary chamber - designed to facilitate rapid desiccation of moist refuse.

Secondary chamber - between the primary chamber and the stack temperatures above 700 degrees. All unburnt and semi burnt material are completely burnt here.

COMBUSTORS FOR SOLID WASTE

Storage pit - for storing and sorting incoming refuse.

Crane for charging the combustion box.

Combustion chamber consisting of bottom grates on which combustion occurs. Grates on which combustion occurs. Heat recovery system of pipes in which water is turned to steam. Ash handling system. Air pollution control system. Operating temperature of combustors - 980 to 1090°C.

SOURCES

Human and animal activities generate different kinds of wastes. These waste are generally in solid form, and may cause pollution of land, water and air unless treated and disposed off. The process of collection, transportation, treatment, and disposal can be grouped under solid waste management. The main sources for solid wastes are domestic, commercial, industrial, municipal and agriculture wastes.

EFFECTS

- Health Hazard

It solid wastes are not collected and allowed to accumulate, they may create unsanitary condition. This may lead to epidemic outbreaks. Many disease like cholera, diarrhea, dysentery, plague, jaundice or gastrointestinal disease may spread and cause loss of human lives. In addition improper handling of the solid wastes is a health hazard for the workers who come in direct contact

with the waste.

- Environmental Impact

If the solid wastes are not treated properly, decomposition and putrefaction may take place, causing land and water pollution when the waste products percolate down into the underground water resources. The organic solid waste during decomposition may generate obnoxious odors. Stray dogs and birds may sometimes invade garbage heaps and may spread it over the neighborhood causing unhygienic and unhealthy surroundings.

UTILIZATION OF WASTE

The solid wastes can be properly utilized to reap the benefits such as :

- Conservation of natural resources.
- Economic Development.
- Generate many useful products.
- Employment opportunities.
- Control of air pollution.

CONTROL MEASURES

The main purpose of solid waste management is to minimize the adverse effects on

the environment. The steps involved are :-

COLLECTION OF SOLID WASTES

Collection of waste includes gathering the waste, transporting it to a centralized location. The collected waste is then separated into hazardous and non-hazardous material.

DISPOSAL OF SOLID WASTES

Before the final disposal of the solid wastes, it is processed to recover the usable resources and to improve the efficiency of the solid waste disposal system. The main processing technologies are compaction, incineration and manual separation. Solid waste disposal method has to be selected, keeping in view the following objectives :-

- Should be economically viable.
- Should not create health hazard.
- Should not cause adverse environmental effect.
- Should not result in unpleasant sight, odor and noise.

Ms. Prajakta Deshmukh

B.Sc.-III

Why Solid Waste Management ?

Solid Waste Management,
A cause that should be given full encouragement
If you see garbage on roads,
And the air smells like pollution
When it's all piling up,
Remember, there's always a solution
Reduce, Reuse, Recycle....
there are three simple words
But when put into action,
They are mightier than swords
The little things we do,
Make this earth a better place
If we go on polluting like now
Soon there will be yes
Flowers to put in the vase.

Ms. Khushboo Thakare

B.Sc.-I

SOLID WASTE MANAGEMENT

Introduction to Solid Waste Management :



Our Mission

"To protect the natural beauty of the environment for citizens through efficient effective and fiscally responsible practices"

"To save the environment by reducing the waste output, re-using things which are reusable and at last recycling the waste".

Solid waste management is a term that is used to refer to the process of collecting and treating solid wastes. It also offers solutions for recycling items that do not belong to garbage or trash. As long as people have been living in settlement and residential areas, garbage or solid waste has been an issue.

The tasks of solid waste management presents complex technical challenges. They also pose various economics, administrative, and social problems which need urgent attention. The major sources of solid waste are households agriculture fields; industries and mining, hotels and catering roads and railways; hospitals and educational institutional; cultural centers and places of recreation and tourism, etc. Plastic waste is also a solid waste. Waste management are the activities and actions required to manage waste from its inception to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process.

Solid waste can be classified into different types depending on their sources.

- Municipal solid waste
- Industrial waste
- Bio-medical waste
- Hazardous waste
- Agricultural waste
- Waste Minimization

Solid waste management can be divided into two major areas :-

- i) Collection including storage, transfer and transport.
- ii) Disposal, including any accompanying treatment. The collection operation can be sub divided into two unit operations, collection consists removing solid waste from the storage point. The haul operation include the total round trip travel time from the collection route to the disposal site.

Three alternatives are normally considered for solid waste disposal :-

- 1) Direct shipment from municipalities to a sanitary landfill.
- 2) Direct shipment from municipalities to a transfer station where solid waste is transferred to larger vehicles and then shipped for ultimate disposal.

3) Direct shipment from municipalities to an incinerator where the solid waste is transferred to larger vehicles and then shipped for ultimate disposal.

Direct shipment from municipalities to an incinerator where the solid waste is burned and the residue is shipped for ultimate disposal. Solid waste management planning requires an assessment of many complex interactions among transportation systems, land use patterns, urban growth and development, and public health consideration.

2) Methods of Handling Solid Waste :-

Solids, Semi-solids, some wet materials, sticky or tarry substances may be handled by front end loaders or buckets. Viscous liquids may be pumped by special pumps. Liquid are handled by normal pumping equipment. Packages may be handled in cartoons and some materials are handled in fiber pack drums. Such machines can convert rubbish into a form more easily and economically handled for processing. Hammer mills in one adaptations or another, are the most commonly used size reduction machines. Such machines can compact refuse. Hydraulic or pneumatic cylinders exert forces as high as 50 tonns and reduce the original volume of refuse by 60 to 80%.

Incineration Equipment :- Solid and chemical wastes are often disposed of with the help of incinerators. Incinerators can be classified on the basis of burner chamber or fuel bed.

3) Salvage and Recovery of solid :-

Many experts feel that the only lasting solution for the solid waste disposal problem lies in recycling and reuse of wastes.

Waste processing has the following advantages :-

Added revenue, less waste to be disposed of.

Steps involved in salvaging and recovery :-

Receiving the raw industrial waste and conveying it to a salvage separations area.

Separating the salvageable materials from waste materials to be further processed. Ferrous and nonferrous materials can be separated using magnets, cardboard and paper products can also be removed and placed onto the paper salvage conveyor for entry into the paper processing system. Unsalvaged waste residue is conveyed to the main pulverizer unit, Compaction system is employed to compact the pulverized residue for disposal.

4) Solid waste Utilisation :-

A developing country cannot afford wastage. By proper utilisation of solid waste a developing country like India can avail of many advantages for instance.

Waste utilisation directly or indirectly contributes to economic development. Waste utilisation generate employment opportunities. United solid wastes create environmental hazards by spreading disease and causing air and water pollutions.

5) Recycling and Reuse of solid wastes :-

Recycling and reuse of the waste helps to reduce the problem of waste disposal. Resource recovery is a method to run wastes into resource recovering usable products both materials and energy. As the disposal cost are expected to rise continuously due to increase in land price, and pollution control

resources recovery is becoming more common and finding more favour. About 70% by weight of municipal solids waste from domestic and commercial areas is combustible. But still only a small percentage of the resources is being recovered. In some municipal solid waste processing facilities, the combustibles are then shredded and burnt in utility boilers or industrial boilers as a primary fuel. This type of solid waste processing operation is known as a refuse derived fuel (RDF) system, RDF is used to supplement other fuel sources in a ratio of 20% RDF to 80% soils fuels.

Recovery and recycling of some of the resources in solid wastes, although a very appealing idea is rather difficult in practice. Expensive materials such as some metals are found to be economical to recycle by industries. Returnable bottles and refundable cans may be recycled from municipal wastes.

Ms. Payal Sonavane

B.Sc.-III

Oo..... Waste

Oo..... Waste, waste, waste
Please leave the mother earth's waist
Problem of fate created by you
whole world is merged in your loop
Tree's loosed their shine rivers get brine
flora & fauna are not so fine
Still we are only just trying
Smoke & smodge are your weapons
People always worships rising sun
Its an open secrete, but no one dare to regret
Humans taking a leap in dark
Although strain every nerve to prohibit this task
Oo human mother earth is crying
Do something she is dying
Nature & waste are sworn enemies
Please humans this time no to be effigies
Oo waste you are dusty & Thrusty
To leg out you its our duty
Finally we decided to take the bull by the horns
Thats the thing we always want
Its difficult for us to dishout
But we will win this fight in knockout

Ms. Rani Khurania

B.Sc.-II

Study of Solid Waste Management

Introduction :- Solid wastes are all the discarded solid materials from municipal, industrial and agricultural activities. The objectives of solid wastes management (SWM) are to control, collect, process, utilize and to control, dispose of solid wastes in an economical way consistent with the public health protection.

Background :- While most of the focus in waste management is on municipal solid waste management, it is important to note that SWM is a small fraction of the total amount of waste generated.

The Resource Conservation And Recovery Act" (RCRA) delineate two categories of waste :-
1) Hazardous waste, 2) Non-hazardous waste

In the United States, 11.7 billions tons of wastes are generated each year, including about 0.7 billions tons of Hazardous waste and 11 billions tons of non-hazardous waste.

Most of that, 11 billions tons is generated by industries during raw material extraction, material processing, and product manufacture, while less than 2% is municipal solid waste.

Waste Generation and waste sources :-

Residential waste	tonns/day
1) Residential waste	1.642
2) Commercial waste (shop, hotels, restaurants)	289
3) Debrises & dust	136
4) Waste from Harbour & Airport	20
5) Office & Governmental Buildings	133
6) Medical Waste	19
7) Waste from Garden / Parks	50
8) Paper Bin Waste	30
9) Waste from street sweeping	176
10) Industry	54

Definition :- All wastes solid or liquid resulting from population, residential and non-residential buildings, as well as transport vehicles.

Sources and Classification :- Solid waste is a source of pollution that comes in importance after water pollution and air pollution. Sources of solid wastes in a community are in general related to land use and zoning.

The principle sources of solid waste are Domestic (Residential), Commercial, Industrial and Agricultural Activities. Although any number of source classification can be developed, the following categories are the most important :- 1) Residential, Commercial, Institutional 2) Industrial, 3) Agricultural 4) Hazardous Waste.

Classification :-

- Garbage : It is produced during the preparation of meat, fruit and vegetables.
- Pathological Waste : Like dead animals and Human waste.
- Industrial Waste :- Chemicals, paints metal or processing, sludge and flyash.
- Agricultural waste :- Farm Animals and crops residues.

Solid Waste Management :-

Solid waste management may be defined as the control of generation, storage, collection, transfer and transport, processing and disposal of solid wastes in a manner that is accord with the best principles of public health, economics engineering, conservation, aesthetics and other environmental consideration and that is also responsive to public attitudes.

The goals of (SWM) can be summarized as follows :-

- To protect environmental health.
- To promote the quality of the urban environment.
- To support the efficiency and productivity of the economy.
- To generate employments and income.

To achieve the following or above goals it is necessary to establish sustainable system of (SWM) :-

- Minimize waste generation.
- Maximize waste recycling and reuse.
- Ensure the safe and environmentally sound disposal of waste.

Functional Elements of Waste Management :-

- 1) Waste Generation.
- 2) On-site Handling, storage & processing
- 3) Collection
- 4) Transfer and Transport
- 5) Processing and Recovery
- 6) Disposal

Composition of solid waste :-

Composition is the term used to describe the individual components that make up a solid waste stream and their relative distribution, usually based on percent by weight.

Composition of SWM as shown in below table :-

Components	% by Weight
Organic :	
Food Waste	50-60%
Paper	10-20%
Plastics	3-7%
Inorganic :-	
Glass	5-10%
Ferrous Metal	2-6%
Non-Ferrous Metal	2-4%

Effect of Solid Waste :-

A) Health Hazard :-

If solid wastes are not collected and allowed to accumulate they may create unsanitary conditions. This may lead to epidemic outbreaks. Many diseases like cholera, diarrhea, dysentery, plague, jaundice or gastrointestinal diseases may spread and cause loss of human lives.

In addition, improper handling of the solid wastes is a health hazard for the workers who come in direct contact with the waste.

B) Environmental Impact :-

If the solid wastes are not treated properly, decomposition and putrefaction may take place, causing land and water pollution when the waste products percolate down into the underground water resources.

The organic solid waste during decomposition may generate obnoxious odors. Stray dogs and birds may sometimes invade garbage heaps and may spread it over the neighbourhood causing unhygienic and unhealthy surroundings.

Cleanest countries in the world :-

Rank	Country Name	EPI Score (%)
01	Switzerland	87.42
02	France	83.95
03	Denmark	81.60
04	Malta	80.90
05	Sweden	80.51
06	United Kingdom	79.89
07	Luxembourg	79.12
08	Austria	78.97
09	Ireland	78.77
10	Finland	78.64
11	Iceland	78.57
12	Spain	78.39
13	Germany	78.37

14	Norway	77.49
15	Belgium	77.38
16	Italy	76.96
17	New Zealand	75.96
18	Netherlands	75.46
19	Isreal	75.01
20	Japan	74.69
21	Australia	74.12
22	Greece	73.60
23	Taiwan	72.84
24	Cyprus	72.60

Mr. Yogesh Irache
M.Sc.-I (Mathematics)

Unravelling the Knots of Memories

Sweet and short memories,
Trapped in photos,
Bound in videos,
Painted in scenarios

Scattered in the form of gifts,
Found in jolly moments that lifts,
Pop-up taking our very soul,
In the form of feelings we adore

Memories made of knots,
Of pleasant and unpleasant thoughts
Memories made of threads of moments
Of real and unreal enchantments

Intense and irrational memories of past
The shadows our deed casts,
Memories even an elite would indulge,
The depth of our heart they touch

Like the lost and found stories,
We preserve memories,
The truths; the lies
Inside us they live, they die !

In Search of Serenity....

Where I can breathe freshness in the air,
Waterfall catches my sight with its glare,
Huge mountains & lush greenary is where,
Oh ! yes, I find serenity there

Where fresh mornings starts my day,
Lazy afternoons constraint me to lay,
Beautiful evenings bless me with cheer,
Oh ! yes, I find serenity there

While wading through descending fog,
Thinking about benevolent God,
Where my soul gets captivate by nature,
Oh ! yes, I find serenity there.

I am walking on untrodden ways,
Where beautiful are nights and lovely days,
Intricate path meets somewhere,
Oh ! yes I find serenity there.

Freedom I have to do anything
Where I am the subject & 'Nature is my king'
I don't have faintest idea of fear,
Oh ! yes I find serenity there.

Worthy is my every drop of tear,
Where I get answer to my every prayer,
I can fill my basket with springs flowers,
Oh ! yes, I find serenity there !

Ms. Vaishnavi Ghatol
B.Sc.-III

Plastic Man - Rajagopalan Vasudevan

Now a days, we get snacks in plastic, food items packed in plastic, Roti's packing, clothings packing, everything is packed in plastic ! The increasing dependancy on plastic is a warning bell for us, land dwelling or water organisms, everyone has to face significant losses due to plastic because plastic is non-biodegradable solid waste. But how much do we really think about getting rid of the plastic waste ? But there is a person who has thought of a 2 in 1 idea to get rid of plastic waste.

Who made roads of waste plastic, that too without spreading pollution. This is our plastic man. In 2001, Tygrajan university's chemistry department's dean and professor Dr. Rajgopalan conducted this experiment in his lab, where he found the bond between bitumen and plastic to give more strength to the roads.

Bitumen a highly heterogenous mixture of hydrocarbons composed from polymer similar to plastic obtained from petrolium distillation. It is used for road surfacing and roating. To make 1 km. of one single lane, you require 10 ton bitumen but our plastic man uses 9 ton bitumen and 1 ton plastic. 1 ton plastic means 10 lakhs carry bags. The plastic that takes 1000 yrs. to decompose when used to make roads becomes a great help to environment.

The process to make plastic road is very simple, firstly 1) road making stones are heated upto 170°C. 2) Then waste plastic is shredded and added to this then plastic melts and binds with the stones in 30 seconds. 3) Then bitumen is added to this which is 160°C hot. Plastic scrap added to hot bitumen coats the stone aggregate without relasing toxic fames and the mixture is created from which plastic road is made.

There are many benefits of this plastic road :-

1) These roads can take more load of vehicles. 2) It can resist water and there is no tension of potholes. 3) It does not require 10 years of maintainance. As India spends around Rs. 300 crores on road maintainance, but plastic roads are maintenance free for atleast 10 years and most importantly it is the most beneficial and much better way of disposing of plastic.

Rajgopalan has even patented this technology in the name of his university and gave this invention to the government of India for free of cost.

Starting from 2002, they are laying the road. In Tamilnadu the first one, then Kerala, Andhra Pradesh, Karnataka, Madhya Pradesh, Himachal Pradesh, Meghalaya, Goa, Delhi, Jharkhand, Maharashtra that is about 11 states are laying he plastic road. In 2015, the Indian government made it mandatory to use waste plastic in building highways Rajgopalan sir is not only thniking of taking care of plastic roads but also plastic bottles as well and he is currently working on Plaston.

Plaston block is a mixture of waste plastic and stones which is 5 times stronger than a concrete block. Plastic road is such an invention which is changing the earth's future. It is such a solution which will finish off the problem of plastic disposal. Rajgopalan's invention has completed both "Swachh Bharat Abhiyan" and "Make in India" misssion and it's become possible due to Rajgopalan's OMG hard work and creativity.

The man who paves India's roads with old plastic

Rajagopalan Vasudevan

Rajagopalan is the 1st man in the world to invent this technology.

He was honored with a "Padma Shri" in 2018.

Almost 11 lakh kms. of plastic reinforced roads have been laid across 11 states in India.

Everything is possible.

Ms. Trupti Ugale
M.Sc.-I (Mathematics)

Methods of Solid Waste Management

Solid waste management is term that is used to refer the process of collecting and treating solid waste. It also offer solution for recycling items that do not belong to garbage or trash as long as people have been living in settlements and residential areas, garbage or solid waste has been an issue waste management. It about how solid waste can be change and used as valuable resource, solid waste management should be embraced by each and every household industry, the business owner across the world industrilization has brough a lot of good and bad things one of the negative effect of industrilization is the creation of solid waste management.

There are different method of solid waste management.

1) Sanitary landfill :-

This is the most popular method of solid waste use today. Garbage is basically spread out in thin layer, compressed and cover with soil or plastic foam morden landfills are design in such way the bottom of land fill is cover with an improvious linear which usually mode of several layer of thick plastic and sand.

2) Composting :-

Due to lack of adequate space for landfills biodegradable yard waste is allowed to decomposed in a medium designed for the purpose only biodegradable waste materials are used in composting good quality environmentally friend only manure is formed from the compost and can be used for agriculture purpose.

3) Pyrolysis :-

In this method solid waste are chemically decompose by heat without presence of oxygen, this usually occurs under pressure and at temperature of upto 4300C in solid waste changes to gas and reduce small quantity in liquid.

In summary proper solid waste management is an integral part of environment conservation should be observe by industrial and companies globally.

This will keep enviroment clean and reduce health problem and settlement problem.

Ms. Neha Deshmukh
M.Sc.-I (Mathematics)

Solid Waste Management, A Mission

Solid waste refers to any garbage, refuse, sludge from a waste water treatment plant, water supply treatment plant, or an air pollution control facility and other discarded material including solid, liquid, semi-solid or contained gaseous material, resulting from industrial, commercial, mining and agricultural operations etc. Solid waste generation is a continuously growing problem at global, regional and local levels. Improper disposal of solid wastes pollutes all the vital components of living environment. The problem is more acute in developing nations than in developed nations such as India. This necessitates management of solid waste.

Firstly, what is solid waste management ? Waste management are the activities and actions required to manage waste from its inception to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process.

To protect the environment and for the health and safety of the population, solid waste management is important. Bad waste management practices can also cause land and air pollution which can result in serious medical conditions in humans as well as animals.

Solid waste pollution is caused mainly through urbanization and through industrial waste. It causes various diseases in human as bacillary dysentery, diarrhea and amoebic dysentery, plague, etc. Solid waste like tyres, glass bottles, rubber, plastic etc. causes pollution of water, air and on land. Rotting garbage is also known to produce harmful gases that mix with the air and can cause breathing problems in people.

Somehow society is also responsible for the solid waste problem. So, it is our responsibility to help in the program of managing the solid waste. We can give helping hands to protect our society, environment and living beings in such ways :- using both sides of paper, washing plastic containers and jars and reuse, buying things in plastic or glass containers that can be reused, reusing boxes, using usable containers for food instead of disposable boxes, plastic wrap, foil or sandwich bags, reusing plastic bags etc. Ultimately, all can do a good work for ourself and for our society by following these ways of waste management.

We can use the formula reduce, reuse, recycle, the 3 R's, we can join the 4th R as recover. Recycle means the product goes through a mechanical process to change its form. We can not reduce and reuse in as much proportion but we can recycle everything and put a step towards our safety along with healthy environment. We can use the 4th R-recover, it is to convert waste into resources (such as electricity, heat, compost and fuel) through thermal and biological means.

In some urban centres, people working in the informal sector collect solid waste for each doorstep to get a collection fee and derive additional income from sale of recyclables. The informal recycling industry plays a major role in waste management. It also ensures that less waste reaches landfills.

The way forward - Around 100 cities in India are set to be developed as smart cities. Civic bodies have to redraw long term vision in solid waste management and rework their strategies as per changing

lifestyles. They should reinvent garbage management in cities so that we can process waste and not landfill it with adequate provisioning in processing and recycling. To do this, households and institutions must segregate their waste at source so that it could be manage as a resource. Compost pits should be constructed in every locality to process organic waste. Community partition has a direct bearing on efficient waste management. Recovery of e-waste is abysmally low, we need to encourage recycling of e-waste on a very large scale level so that problem of e-waste disposal is contained. So, let's join the solid waste management programme and be a part of it to help our developing nation, on the way to developed nation.

Ms. Nishigandha Chimankar
B.Sc.-III

Poetry

Poetry is not about, turning white pages into inked,
Poetry is not just about putting words after words to link.
Poetry is all about the unending thoughts,
Poetry is all about the voids that are unsort
Poetry is all about bringing the wandered thoughts -
To the beautiful rhythm path
Poetry is about unwinding the ruthless
emotions residing inside
Poetry is about the adhering feelings
which are needed to be untied.
Poetry is about splitting the congeal emotions,
In the untouched infinite directions.
Poetry is all about writing your heart out,
Poetry is all about scattering the ray of twilight around
They say true poems rest between the words,
I believe cause I feel they are the liberated birds
Feelings coze out on the paper
Like the broken strings of pearls on the floor
Every word has its story and origin,
Every word is like a color worn on skin
The feelings have deep connection with heart,
It is something which can't stay apart
You will never know how a poem will shape,
Out of your thoughts drowned deep in the ocean of observations
You will never know what turn your poem will take,
When you set it free on the path of expressions !

Ms. Vaishnavi Ghatol
B.Sc.-III

Waste Management

Waste management or waste disposal are all the activities and actions require to manage waste from its inception to its final disposal. This includes amongst other things collection, transport, treatment and disposal of waste together with monitoring and regulation. Waste can take any form that is solid, liquid, or gas and each have different methods of disposal and management. Waste management normally deals with all types of waste whether it is created in forms that are industrial, biological, household, and special cases where it may pose a threat to human health. Our planet continues to relentlessly grow in population. A corresponding growth in waste products also occurs. The two major categories of waste are, Biodegradable and Non-biodegradable. Biodegradable materials can be decomposed by microorganisms e.g. Human and animal waste, plant products, wood, paper, food waste, leaves, grass clippings, remains from the death of living creature etc. Materials having properties that do not break-down or decay are called Non-biodegradable e.g. Glass, Metals, Plastics, Electronic devices, Medical waste etc.

With rapid urbanization, India is facing massive waste management challenge. Over 377 million urban people live in 7,935 towns and cities and generate 62 million tonnes of municipal solid waste per annum. Only 43 million tonnes of the waste is collected. 11.9 million tonnes is treated and 31 MT is dumped in landfill sites. Waste Management is one among the basic essential services provided by municipal authorities in the country to keep urban centers clean. However, almost all municipal authorities deposit solid waste at a dump yard within or outside the city haphazardly. Experts believe that India is following a flawed system of waste disposal and management.

Solid Waste Management (SWM) is one among the basic essential services provided by municipal authorities in the country to keep urban centers clean. However, almost all municipal authorities deposit solid waste at a dump yard within or outside the city haphazardly. Experts believe that India is following a flawed system of waste disposal and management.

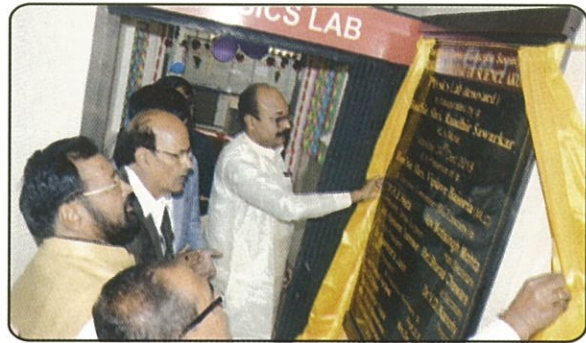
Waste disposal has evolved into a business and it has numerous functions including removal of waste. The organic waste is separated from non-recyclable and inorganic waste. This has allowed metropolis to make use of organic waste to create compost for public areas. There are even some cities that package and sell the compost to make money. Another advantage of waste management is that it is beneficial to health. More awareness regarding classification of garbage should be given to citizens. A nodal government agency should be established that can properly check whether garbage is properly separated or not. Some strict rules and regulations should be framed and implemented for separation of garbage. Reutilization of garbage should be properly done.

Ms. Kanchan N. Mangtani
M.Sc.-II (Microbiology)

चित्रबिंब



Felicitation of Dr. Nanasaheb Chaudhary for his contribution as a Resource Person in Diabetic Camp organized by The B.G.E. Society, Akola



Inauguration of renovated Physics Laboratory at the hands of Hon'ble Shri Randhirji Sawarkar, MLA, Akola



Workshop on 'Eco-friendly Ganesha Idol Preparation' organized by Dept. of Microbiology



Inauguration of University Level P.G. Student Seminar Competition on 'Topology' organized by Dept. of Mathematics



Prof. W.G. Naikwade honoured with 'Life Time Achievement Award' by Mathematics Teachers' Association, S.G.B.A.U., Amravati



Inauguration of 'Poster Presentation Competition' during State Level Seminar on My Health My Responsibility organized by Dept. of Microbiology



Workshop on EUREKA (Emerging Universe of Research Education & Knowledge Ascent)



Workshop on 'Cyber Crime & Women's Safety' organized by NSS

चित्रबिंब



Educational Study Tour of Dept. of Zoology to Lakshmi Dam, Kolhapur



Educational Study Tour of Dept. of Computer Science, IT, Electronics, Physics, Mathematics to various IT Industries at Khamgaon & Caves of Ajantha



Educational Study Tour of Dept. of Botany to Lonar Crater



Educational Study Tour of Dept. of Botany to various Scientific & Historical Places at Hyderabad



Educational Study Tour of P.G. Dept. of Microbiology to Lonar Crater



Educational Study Tour of Dept. of Microbiology to Water Purification Plant, Mahan



Publication of College Annual Magazine 'Pratibimb'



Publication of College Science Magazine 'infoSCIENCE'



Report Section

DEPARTMENT OF BIOCHEMISTRY

REPORT

Biochemistry gives students a variety of skills that are readily transferable and a practical understanding of laboratory work. It is a subject opted by majority of students of degree college. The Department of Biochemistry, Shri R.L.T. College of Science, Akola, aims to develop practical and technical skills in students through laboratory-based work and guide them to assist the society about health prospective.

The department is working under esteemed guidance of Associate professor and Incharge Head Dr. U.K. Bhalekar. The Teaching staff of department includes Ms. M.M. Deshmukh, Ms. D.R. Goyanka and Mr. P.B. Ingle. The Department of Biochemistry has shown its potential by participating and conducting various activities during the academic session. The Department has organized assignments, seminars and projects for the B.Sc. Part I, II and III year students as part of their syllabus for internal assessment and to increase the skill of the students.

Along with three year degree course, to motivate the students for their better future, department provides the students with Certificate course in Clinical Laboratory Technology (CCLT), Diploma in Clinical Laboratory Technology (DCLT) and Advance Diploma in Clinical Laboratory Technology (ADCLT).

In this academic year, the total number of admissions was as follows :

Sr.No.	Class/Course	Number of students
1	B.Sc. I	39
2	B.Sc. II	47
3	B.Sc. III	42
4	CCLT	91
5	DCLT	51

During the session 2018-2019, the department conducted various activities :

- In association with the department of Microbiology, a blood grouping camp was held on 24th December, 2018 in memory of Late Principal Shri. M.G. Joshi.
- On 6th January, 2019, The Berar General Education Society organized a health camp for all staff members of society. The camp was successfully conducted by the department of biochemistry in association with the department of microbiology. The BMI, blood sugar levels and blood pressure of approximately 105 staff members was calculated. Dr. Nanasaheb Choudhari addressed the camp and gave the importance of food and health.
- On 28th February, 2019, on the occasion of National Science Day, a State level seminar on "My Health,

My Responsibility” and a teachers’ workshop on “Teaching Constrains in Microbiology & Allied Sciences” was jointly organized by the department of biochemistry & microbiology in collaboration with Microbiologist’s Society India. More than 400 students were benefitted. The eminent & dynamic personalities like Dr. Shiva Aithal and Dr. A. M. Deshmukh addressed the students by their informative technical talk sessions.

- On Republic Day, to motivate and encourage the students for good work, students who have achieved quality in various fields are duly awarded for their bright accomplishments.
- Students of the department enthusiastically participated in extra-curricular activities like seminars, education tours, workshops and other activities.

Dr. Umesh K. Bhalekar
Incharge
Department of Biochemistry

DEPARTMENT OF BOTANY

REPORT

Department of Botany has shown its potential by participating and conducting various curricular and co-curricular activities during the academic session.

Departmental Activity and students Achievement

On the occasion of 'Vanmahotstav' on 23.07.2018, Department of Botany distributed plants sapling. These saplings were developed by the seeding collected by students of "HOLY BASIL" Club from College campus. Our principal Dr. V.D. Nanoty, Dr. Rahatgaonkar, Prof. R.G. Chavan, Dr. S.M. Nagrale and all the staff members of Botany Dept. Prof. Mrs. V.N. Badgujar, Dr. P.M. Khadse, Dr. A.A. Sangole & Prof. S.V. Madavi, Miss. D.G. Raipure were present.

On the eve of Independence day 15.08.2018 "Tree Plantation" activity was carried out in the College campus and in Botanical Garden. Pricipal Dr. V.D. Nanoty, Dr. U.K. Bhalekar, Prof. R.G. Chavan, Dr. Poonam Agrawal grace the occasion. All Hod's and all the staff members of Botany Department & Students of Holy Basil Club were present.

On 05.09.2018, Teachers Day 'Self Governance Day' was celebrated by conducting seminars of students from B.Sc. II year.

On 8th Sep. 2018, Dr. Ashwin D. Nannaware (CSIR, Central Institute of Medical And Aromatic Plants) Lucknow, visited Department of Botany & Botanical Garden and interact with the students regarding Medicinal & Aromatic plants.

Department of Botany "Holy Basil club" organized " Study Tour" for B.Sc. I and B.Sc. II students at "Lonar Crater" on 30.01.2019. All the staff members Prof.Mrs. V.N. Badgujar, Dr. P.M. Khadse, Dr. A.A. Sangole & Prof. S.V. Madavi were present in this Tour.

Similarly Study Tour of B.Sc.III (Sem.VI) was organized by Botany Dept. on 10.03.2019 to 13.03.2019 to Hyderabad. All the staff members & students were present in this Tour.

On 11.03.2019 student's of 'Vidhyan Manch' visited Botany Department. Dr. A.A. Sagole guided students by introducing function & use of various microscope.

Similarly Seminars, Assignments & Projects were conducted for B.Sc. I, B.Sc. II & B.Sc. III yr. students in both semesters. Students participated in various workshops and seminars.

Our students participated in Three day state level workshop on "Nursery Techniques & Management" held on 9th- 11th Jan. 2019 at Rajshree Shahu Science College, Chandur Rly.and Vinayak Vidnyan Mahavidyalaya Nandgaon (Kh.) Amaravati.

Shri.Akhilesh Puranik	B.Sc.I yr.
Shri.Givind Andhare	B.Sc.II yr.
Shri.Mangesh Deshmukh	B.Sc.III yr.

श्री राधाकिसन लक्ष्मीनारायण तोष्णीवाल विज्ञान महाविद्यालय, अकोला

Our students Participated in Inter-university poster competition (IUPC-IS-2019) held by Dept. of Botany & IQAC of Shri Shivaji Sci. Akola in collaboration with Indian Science Congress, Amaravati chapter (MS).

Shri Om Kale	B.Sc. I yr.
Ku. Bhagyashree Sawarkar	B.Sc. II yr.
Shri. Harshal Bais	B.Sc.III yr.

The students from B.Sc. II yr., Shri Sachin Atkar & Shri Himanshu Sunariwal attended One day Inter Collegiate workshop on “Flower, Structure and Types of Inflorescences” at ACS College, Kiran Nagar Amravati, on 01.11.2018.

The important achievements of the faculty members of the Dept. of Botany during the session 2018-19 are highlighted below.

Mrs. V.N. Badgujar : She has completed Refresher course in Life Science at SGBAU Amravati from 20th Aug.2018 – 12th sep. 2018 she has presented Research papers in International Conference on ‘Multifunctional Advance materials. ICMAM-2018’ on 5th to 7th Oct.2018 organized by Kamala Neharu Mahavidyalaya, Dharampeth M.P. Deo Memorial Science College, Nagpur. & Published paper in International Journal of Current Engineering and Scientific Research (IJCESR).

She has also presented paper in National conference on “Emerging trends in Science held at Vidyabharti Mahavidyalaya, Amaravati on 01.02.2019 & 02.02.2019.

She has published paper in International E-Research journal “Research Journey” having impact factor-SJIF 6.261. Also she has attended 9 workshops.

Dr. P.M. Khadse : He has received his Ph.D. degree on 18th july 2018, Thesis title “Phytochemical Analysis and Anatomical study of some unknown medicinal plants used in Diabetics”

He has completed Refresher course organized by Academic Staff college HRDC, RTM- Nagpur University Nagpur, During the period 17.09.2018 to 07.10.2018 .

He has also worked as Co-officer Incharge for the Winter Examination 2018 held at Narsimha Arts,Commerce & Science College, Amaravati during the period 16.10.2018 to 12.12.2018.

He has participated & presented papers in National conference on “Emerging trends in Science” held at Vidyabharati Mahavidyalaya, Amaravati on 01 & 02.02.2019. He published his paper in International E-research journal “Research Journey” having impact factor SJIF 6.261. He also participated in National conference “Recent Advances in Science & Technology” (RAISAT-2019) held at Gopikisan Sitaram Gawande Mahavidyalaya, Umardhed and published his paper in “Ajanta” An International Multidisciplinary Quarterly Research Journal having impact factor 5.5. He has also attended 3 workshops.

Dr. A.A. Sangole : She has presented Research paper in International Conference on Multifunctional Advanced Material ICMAM-2018 Organized by Kamala Neharu Mahavidyalaya Nagpur & Dharampeth M.P. Deo Memorial Science College, Nagpur on 5th to 7th oct.2019. She has published Paper in International journal of Current Engineering & Scientific Research (IJCESR).

She has presented paper in UGC sponsored National conference "Emerging Trends in Science" on 01.02.2019 - 02.02.2019. held at Vidyabharati Mahavidyalaya, Amaravati. She has published paper in International E-research journal "Research Journey" having impact factor SJIF 6.261. She has also presented paper in National conference on "Recent Advances in Science & Technology" (RAISAT-2019) organized by Gopikabai Sitaram Gawande Mahavidyalaya, Umardhed. She has published her paper in International Multidisciplinary Quarterly Research Journal "Ajanta" having impact factor 5.5. She has attended 3 Workshops.

Prof. S.V. Madavi : He has participated in two days National Conference "Emerging Trends in Science" held at Vidyabharati Mahavidyalaya Amaravati on 1 & 2 .02.2019.

He has also attended 2 workshops.

Our CHB teacher Miss Rasika Patil awarded Ph.D. Degree. On 27th Feb. 2019. Her Thesis Topic was "Phytopathological studies of some medicinal plants from Dnyanganga wild life Sanctuary".

Holy Basil Club

(Botanical Association for sustainable & Innovative learning)

Holy Basil club is an association made by Botanist & students from Botany Dept. of Shri R.L.T. College of science, Akola. This club works for social & creates platform for emerging young scientist and developer skills among the students.

Various activities were taken during the session.

Department of Botany "Holy Basil Club" organized 'Flower Show' for B.Sc. II year students on dated 23.01.2019. Our principal Dr. V.D. Nanoty was the president of the function. Mrs. V.N. Badgujar gives the introduction & aim of the programme.

The competition was judge by Dr. P.T. Agrawal (HOD Dept. Chemistry) and Dr. Sudhir Kohchale (Asst. Prof. Dept. of Zoology). The event was organized by Dr. A.A. Sangole and Prof. S.V. Madavi. The programme was conducted by Prof. S.V. Madavi & Dr. P.M. Khadse proposed vote of thanks. In all 48 students participated in this event. The winners of the programme was awarded by certificates and cash prize.

- | | | |
|--------------------------|---|-----------|
| • Ku. Archita S. Pundkar | } | I Prize |
| • Ku. Neha Moraskar | | |
| • Ku. Vaishnavi S. Ingle | } | II Prize |
| • Ku. Vaishnavi A. Tayde | | |
| • Shri Akash More | } | III Prize |
| • Shri Yogesh Katre | | |

Similarly Study Tour of B.Sc. I and II Students was organized to the 'Lonar crater' in Buldhana district by the Department on 30.01.2019. In all 47 students participated in the study Tour.

The students collected the plants from the vicinity of Lonar Lake & identified them with the help

श्री राधाकिसन लक्ष्मीनारायण तोष्णीवाल विज्ञान महाविद्यालय, अकोला

of Flora of Maharashtra. All the staff members Prof. Mrs. V.N. Badgujar, Dr. P.M. Khadse, Dr. A.A. Sangole, Prof. S.V. Madavi participated in this Tour Shri G.P. Sharma, Shri Prakash Salphade & Shri Harish Umbarkar accompanied the tour.

Similarly Department of Botany 'Holy Basil Club' organized study tour for B.Sc. III year students to Hyderabad on 10.03.2019 to 13.03.2019. The students visited Global icon of Hyderabad i.e. charminar, as well as salarjung Museum, Ramoji film city and various historical places. They visited the kotla Vijaybhaskar Reddy Botanical Garden. They also visited Bonsai garden & color garden in which different ornamental plants were cultivated. In all 18 students participated along with Teaching staff. Pro. V.N. Badgujar, Dr. P.M. Khadse, Prof. S.V. Madavi and Non-Teaching Staff Member Mr. R.S. Dandnaik accompanied with the students.

Prof. Mrs. Vaishali N. Badgujar
Head
Department of Botany

DEPARTMENT OF CHEMISTRY

REPORT

It is with great pleasure I share with you the annual report of chemistry department for the session 2018-19 of Shri R.L.T. College of Science, Akola. Department is contributing significantly in creating and disseminating knowledge in various areas through undergraduate, postgraduate and doctoral programmes and providing an education through practically focused, multidimensional, quality teaching-learning process in excellent academic environment. In our pursuit of excellence, we persistently seek and adopt innovative methods to improve the quality of education. The benchmarks we set for ourselves in the field of teaching and research propel us in our journey towards excellence. Faculty of the department comprises qualified and goal-oriented members and always at forefront to organize various academic activities to inculcate effective learning abilities and research skills, to extend the intellectual depth, to make students creative, innovative and self-reliant.

To expose the students in the frontier areas in chemistry and to enhance employability skill of them, department is always ahead in performing the various academic activities. The important academic activities and the programmes organized by the department of chemistry during the session 2019-19 are as mentioned below.

Inauguration of 'CRYSTAL Club'

To enhance the academic activity of student and to increase the participation of student in social activity, department of chemistry has decided to establish one student club and in view of this our department establishes 'CRYSTAL Club' (*Chemical Research by Young Scientist & Technicians Aborting Lacking of Society*) which was inaugurated on 12th September 2018. Principal Dr. V.D. Nanoty was the president for this function and Dr. R.J. Chavan, Head, Department of Electronics was the inaugurator for the function. Presence of head's of various departments had been added grace to this function. Ms. Sapana Chavhan was the student President of this club and students from M.Sc. I & II year are the members of this club with some officiating body.

National Level Workshop on "Art of Perfume & Soap Making"

"Education must be for giving the jobs, not for securing the jobs" with this motto Department of Chemistry's CRYSTAL Club organized a One Day National level workshop on 'The Art of Perfume & Soap Making' on 9th September 2018. Hon'ble Dr. Ranjeet Patil, Minister of Home Affairs was the Inaugurator of the workshop. IAS, District Collector, Akola Hon'ble Shri Astikkumar Pande was the Guest of Honor for this workshop. Hon'ble Dr. R.B. Heda, the President of The B.G.E. Society, Akola was the President for the Programme. The Inauguration of workshop took place in the gracious presence of Honorary Sec. of the B.G.E. Society Adv. Motisinghji Mohta and all the executive member of the B.G.E. Society. Er. Ashween Nannware, Scientist, CSIR central Institute of Medicinal and Aromatic Plant Lucknow and Mr. and Mrs. Mukul Agrawal Industrialist of Manufacturing Perfume and fragrance Product, Nagpur was the Resource person of the workshop. More than 500 students from all over the region got benefited by this workshop. All the staff members and members of crystal club organized the event

successfully.

One Day workshop on “Self Employment: Manufacturing of Fragrance Stick”

CRYSTAL Club Department of Chemistry organizes one day workshop on manufacturing of fragrance stick to make the students self employed and to develop a practical skill among the students. Alumni of our department give the demonstration how to make the fragrance stick and which chemicals were used to make various types of fragrance. Apart from this the second part of workshop includes the environmental friendly fragrance preparation by using the temple waste known as Nirmalya. This is the best part of the workshop. Student themselves prepared the stick by using the Nirmalya and sold these sticks to the teaching and non teaching staff members of the college and money collected from this activity was donated for Kerala flood victims.

Organization of Workshop of “Agarbatti Making (Fragrance Stick Making & Making of Paper Bag)” at Village Appoti during the Residential Camp

Crystal Club not only stop this activity by preparing these fragrance stick by their own but also the students of CRYSTAL Club gave the demonstration of this Agarbatti making to developed a self employment among the village people. Also to bring the environment awareness among these village people students of our college gave them the demonstration about the making of paper bag.

The important academic activities of department of chemistry during the session 2018-19 are as highlighted below.

Guest Lecturers

‘CRYSTAL Club’ organized the guest lectures of eminent personalities in the subject chemistry. **Dr. Rajesh Singh, Scientist-C, Environmental Hydrology Division, National Institute of Hydrology, Roorkee** delivered the guest lecture on ‘Water Quality and Control’ on 3rd January 2019 for the B.Sc as well as M.Sc. students.

Organization of Poster Presentation Competition

‘CRYSTAL Club’ of Chemistry Department is always ahead for the co-curricular activities. This year CRYSTAL Club organizes the Poster Presentation Competition for M.Sc.-I & M.Sc.-II year students on January 14, 2019. The topics given for the poster presentation competition were air pollution, water pollution, soil pollution, green chemistry. The aim of the poster Presentation Competition was to bring the Environment awareness among the students and also to cover their academic syllabus. This activity also motivates the student to participate in various co-curricular activities and also develop self confidence in them.

Total 27 Students participated in this activity. The best poster presentation has been awarded by giving the prizes in the form of the Book. Prizes were sponsored by the alumni of the Chemistry Department. **Ms. Shraddha Hatgaonkar** from M.Sc.-Ist Year received First Prize. Similarly **Ms Supriya Sahu (M.Sc.-I) & Ms Sapana Chavhan (M.Sc.-II)** stood second and third for this competition.

Dr. P.P. Deohate, Asst. Professor Dept. of Chemistry & Dr. S.R. Kohchale, Asst. Professor Dept. of Zoology were the Jury Member for this Competition. Principal Dr. V.D. Nanoty Sir & IQAC Co-ordinator Dr. Rahatgaonkar was the Chief Guest for this Programme.

Seminars and Group Discussions

The seminars and group discussions of B.Sc.-II & III students were conducted in the months of September, October-2018 and February, March-2019 under the supervision of all the staff members of the department.

Organization of Online Chemistry Aptitude Test (Quiz Competition) for B.Sc. Students

Department of Chemistry developed e-module of online test conduction and conducted the online aptitude quiz test of B.Sc. students on 21st January 2019. The student who stood first was given a text book in the form of gift. Total 60 students participated in this test.

Atchem ... Aptitude Test in Chemistry

To create interest in chemistry, assess the conceptual understanding and to upgrade the subject knowledge, aptitude test in chemistry was conducted for B.Sc.-III year students on 5th March 2019. **Ms. Rewati S. Wankhade** and **Ms. Mansi R. Heda** achieved the 1st and 2nd position respectively. Total 287 students participated in this test. Test was co-ordinated by Dr. Pradip P. Deohate.

Consultancy Services

Consultancy services like analysis of drinking water, irrigation water, determination of physico-chemical parameters and different types of estimations of samples of projects of school and college students are engaged.

The important achievements of the faculty members of department of chemistry during the session 2018-19 are as highlighted below.

- **Dr. Pradip P. Deohate** published 6 research papers in national and international journals. He has participated in 1 conference, 3 seminars cum workshops and presented 1 research paper. Under his guidance 1 student has awarded with Ph.D. degree and 1 student is doing the Ph.D. research work. He has guided 3 students for research project and 2 students for Avishkar. He has received the state level "Ideal Teacher Award" from Congress Teachers Cell, Akola for academic excellence and research contribution. He is working as the chief editor of "AUCTA Newsletter" and editor of science magazine "infoSCIENCE". His 2 educational articles were published in the newspapers Sakal and Matrubhumi. He has delivered a guest lecture on "Stereochemistry" at Arts, Commerce and Science College, Arvi (Wardha).
- **Dr. Poonam T. Agrawal** has been recognized as a Ph.D. Supervisor of S.G.B. Amravati University, Amravati, and Amravati. She has published 3 research papers in international journal. She has participated in 2 conferences, 1 workshop and presented 3 research papers. She has guided 3 students for research project and one student for Avishkar. She worked as a course coordinator for the four days soft Skill development workshop organized by Shri R.L.T. College of Science, Akola in collaboration with S.G.B. Amravati University Amravati. She has worked as a resource person and jury member for various academic and scientific programmes.
- **Dr. Pravin R. Kawle** has been recognized as a Ph.D. Supervisor of S.G.B. Amravati University, Amravati. He published 1 research paper international journals. He participated in 2 conferences, 2 workshop and presented 2 research papers. He guided 3 students for research project and

one student for Avishkar.

- **Dr. Kavita M. Heda** published 3 research papers in national and international journals. She participated in 2 conferences, 2 workshops and presented 2 research papers. She guided 3 students for research project. She worked as a jury member for various academic and scientific programmes.
- **Dr. Ashish G. Sarap** published 1 research papers in international journal. He has participated in 2 conferences, 1 workshop and presented 2 research papers. He guided 3 students for research project. He delivered a guest lecture at Sangdudkar Mahavidyalaya, Daryapur. He has guided 3 students for research project.
- **Mr. Vinod D. Deotale** published 2 research papers in international journal. He participated in 2 conferences, 1 workshop and presented 2 research papers. He delivered a talk on Late Dr. A.P.J Abdul Kalam on Wachan Prerana Din and also delivered guest lecture in NSS camp of Shri R.L.T. College of Science, Akola and Khandelwal College, Akola. He has guided 3 students for research project.
- **Mr. Sankesh C. Zyate** published 1 research paper in international journal Presented 1 research paper in conference. He has started the NET/SET Coaching class for the M.Sc. Students of our department. He has guided 4 students for research project.
- Research student **Ms. Ketki D. Bansod** has been awarded with Ph.D. degree by S.G.B. Amravati University, Amravati and **Ms. Kalpana A. Palaspagar** is working for Ph.D. degree under the guidance of Dr. P.P. Deohate. They have also published research papers in national and international journals, attended the conferences and presented research papers.

Students are at the centre of all endeavors in department of chemistry. During the session 2018-19, additions to the students' achievements are as follows.

- **Ms. Vasundhara Dutonde** (B.Sc.-III) participated in district, university and state level research festival "Avishkar" and achieved the colour coat of S.G.B. Amravati University, Amravati. She was guided by Dr. P.P. Deohate.
- **Ms. Aishwarya Banait** (M.Sc.-II) achieved 2nd prize in university level intercollegiate seminar competition organized by AUCTA.
- **Ms. Shraddha Akhare** (M.Sc.-II) achieved 1st prize in university level intercollegiate poster competition organized by AUCTA.
- **Ms. Megha Rajpal** (B.Sc.-III) achieved 1st prize in university level intercollegiate seminar competition organized by AUCTA.
- **Ms. Aarti More** and **Ms. Anuradha Mahajan** (B.Sc.-I) participated in university level intercollegiate chemistry-quiz competition.

Dr. Poonam T. Agrawal
Head, Department of Chemistry
In-charge, P.G. Department of Chemistry

DEPARTMENT OF COMPUTER SCIENCE & IT

REPORT

Department of Computer Science established on 1st July 1997 and Information Technology introduced in the year 2010-11. Computer Science Department Grant aid in April 2012 and first post of Assistant Professor filled in 2014.

Department runs various activities throughout the session like regular students' Seminar, Project & Educational tour as per the curriculum.

Department of Computer Science & IT arranged Three Guest lectures in the session 2018-19, on current trends in Computer Science and IT sectors also guided on opportunities and different fields are available after graduation.

- Prof. R.D. Bhojar from Post Graduate Department of Computer Science, S.G.B A.U. Amravati, delivered lecture on future scope of computer science for students career on 05 Dec. 2018.
- Prof. Prof. S.M. Kharbade from P.N. College Pusad, shared their experiences with students and current demand of IT sector on dated 14 Dec. 2018.
- Prof. L.R. Muley from J.M.V. Achalpur, interacted with students and given some tips from student to improve their programming skill on dated 15 Dec. 2018

As a innovative practice of the department has been design and updated and modified a Digital Blog in Oct.18 for displaying important information in softcopy or digitally. Name of the departmental blog is : “rlt-csit.blogspot.com”

Department of Computer Science has been renovate in the month of Jan. / Feb. 2019 with modernized CAT-6 LAN cables and also Fiber Optics high speed Internet implemented.

Department of Computer Science & IT arranged one day Educational Tour for B.Sc. III year 49 students visited *IT Park* at Khamgaon and UNESCO World Heritage Site *Ajanta caves* on dated 02 March 2019.

In EUREKA 2018-19 one day workshop which jointly organized by our college and Akola district Science Forum for school students, in students LAB visit session we have presented the computer & Networking related knowledge to school going students on dated 13 March 2019.

Assistant Professor Mr. R.B. Ghayalkar completed his SWAYAM online refresher course in Bio Medical Image Processing and he has also presented research paper on “An Emerging Field IOT: Review” in the National Conference An Emerging Trends in Science, at Vidya Bharati Mahavidyalaya, Amravati.

Department / College MoU :

Department has taken effort and initiative to established Department and College Level **Memorandum of Understanding (MoU)** with three IT Companies :

- "MICROSPECTRA SOFTWARE TECHNOLOGIES PVT. LTD"
- SPECTRAMIND WEB HOSTING SOLUTION PVT. LTD
- "VIBRANTMIND DIGITAL MARKETING SOLUTION PVT. LTD "

Objective of MOU :

To facilitate the transfer of knowledge and skills through hands on training and sharing of ideas through out of box thinking so as to overcome challenges faced in IT industries.

1. To provide Certification to the students.
2. To provide industrial training to students and staff.
3. To provide Internship to the students.
4. To provide mentoring to final year students to prepare them for technical interview.
5. To provide industrial expertise for students to get awareness in core industrial activity.
6. To provide industrial visit to familiar with IT Industry environment.
7. To provide Training & Campus drive.

The Memorandum of Understanding is valid for a period of 5 years with effect from the date of signing of the agreement i.e. **from 09/04/2019 to 09/04/2024.**

Prof. R.G. Chavan / Prof. R.B. Ghayalkar
Head / Incharge
Department of Computer Science & IT

DEPARTMENT OF ELECTRONICS

REPORT

Department of Electronics is one of the creative departments of Shri R.L.T. College of Science, Akola. Knowledge of Electronics Science and its fundamentals broaden the outlook of the students and helps in improvement of their overall performance and use in day to day life.

Staff members in the department include Shri R.G. Chavan, Associate Professor and Head, Shri R.D. Chaudhari, Assistant Professor, Shri M.M. Kulkarni (CHB), Shri N.O. Chimankar (CHB), Shri J.S. Tated, Miss. M.O. Tijare, Miss D.D. Mehare, and Non Teaching Staff Mr. G.B. Giri (Lab Assistant), & Mr. S.G. Babulkar.

Departmental Activities and Student Achievements :

- Conduction of seminar for B.Sc.II and B.Sc.III students using LCD projector and PPT.
- Experimental kits, Power supplies, of B.Sc.II are assembled and successfully built by B.Sc.III Sem-VI students as a part of their project work. (The approximate cost is Rs. *Thirty six thousand.*)
- **Mr. Yash Vidyasagar** of B.Sc.III participated in university level research festival-avishkar.
- **Mr. Yash Vidyasagar** of B.Sc.III participated in poster competition held at Vidyabharati college Amravati in national conference held on 1st & 2nd february 2019 and received **1st prize**. The title of his poster was **“Microcontroller Based Techeye System for Obstacle Detection & Ranging To Assist Blind Person”**
- B.Sc.III students successfully participated in educational tour at I.T. Park Khamgaon.

Staff Achievements :

- Shri R.G. Chavan was appointed as member of subject examination committee for winter 2018 and summer 2019 examination by S.G.B. Amravati University, Amravati.
- Shri R.G. Chavan & **Mr. Yash D. Vidyasagar, Published research paper titled “Microcontroller Based Techeye System for Obstacle Detection & Ranging To Assist Blind Person”** in research journal *‘RESEARCH JOURNEY’ International E- Research Journal, UGC Approved Journal, ISSN:, 2348-7143, February-2019.*
- Shri R.D. Chaudhari, & Shri Dattaraj Vidyasagar, **Published research paper titled “Arduino Uno Based Accident Avoiding System IN Mountainous Area ACROSS U-Turn”** in research journal *‘RESEARCH JOURNEY’ International E-Research Journal, UGC Approved Journal, ISSN:, 2348-7143, February-2019.*
- Shri R.D. Chaudhari & Shri Dattaraj Vidyasagar presented research paper in national conference held on 1st & 2nd Feb. 2019 at Vidhya Bharati Mahavidyalaya, Amravati.
- Shri R.D. Chaudhari successfully participated in university level workshop “Train the trainer”. He successfully completed forty hours Refresher course in Innovating & best practices in teaching & learning, Online “Swayam” organized by S.G.B. Amravati university, Amravati..

Prof. R.G. Chavan

Associate Professor and Head
Department of Electronics

DEPARTMENT OF LANGUAGES

REPORT

The academic year 2018-19 has been a special one so far as the academic achievements are concerned. This year too the department tried to give its best. The Department of Languages is growing and Constantly renewing and improving its programs. Lectures are conducted on digital screen for effective learning experience and positive output. All lectures reading and assignments are in English, Marathi and Hindi. We take pride in our innovative programming and dedicated teaching and our aim is to enable students communicate better in Marathi, Hindi and English too. The Department houses total 7 teachers including one full-time faculty. While six are on clock- hour basis.

Summary of Our Achievements :

A.B. Khedkar published his poems in an international journal Langlit ISSSN 2349-5189, in the volume 5th and 3rd issue of Feb. 2019. He also worked as a judge among the panel at a district level youth parliament competition held in the college auditorium on 16th of January 2019.

Cultural achievements (debate and elocution) : Under the guidance of Mr. Arun khedkar, Mr. Mangesh Ubale, Mr. Vinod Deotale and Dr. Rajesh Chandravanshi students succeeded in many competitions. Many students brought laurel to the college by winning spectacular prizes in various debate and elocution competitions. Mahesh Janjal and kajal jawke won 3rd prize in Vidhardha -level debate comp. at Babuji Deshmukh Library, Rutvija Deshmukh grabbed 3rd prize prize in elocution. Vijaya Tekade won 2nd at district level prize as well as at Taluka level prize, whereas Mahesh Janjal won 3rd prize comprehensively. District-level Elocution completion was organized by Nehru Yuva Kendra, Akola. Ku Ketki Kshirsagar and Mahesh Janjal emerged victorious in Late Shri Natwarlal Chaudhari elocution competition organized by the BGE Society Akola. Vaibhavi Tople ranked first and Vijaya Tekade third in the Youth parliament district level screening test.

Creative - writing competition :

Like previous year this year too Creative writing competition was organized to set a platform for emerging future writers, poets etc. and to encourage and develop writing skills among students. Which will help them to earn their living by selecting writing as a best career. The competition was jointly organized by the Department of Languages & The Library. The competition was a tremendous success, total 70 students participated in various categories; article writing, poetry writing ,drawing and story writing. So top 3 three students from each category were felicitated for their excellent performance.

Mr. Mangesh Ubale (The Librarian) and Mr. Arun B. Khedkar (Assistant Professor) worked as Co-ordinator for this competition. Dr Pradip Deohate and Dr. Archana Sawarkar judged the competition. Top 12 contestants were felicitated with a certificate and a book at the hands of the principal. All the participants too were given a certificate for their enthusiastic participation.

Prof. Arun B. Khedkar
Assistant Professor in English
Department of Languages

LIBRARY & INFORMATION CENTRE

REPORT

The Library has been constantly improvising and implementing new ideas. As application of new methods and ideas give birth to creativity and new knowledge. The Department of Library is marching on the same path new books as every year is introduced this year too. Magazines, Journals, Periodicals, reference books, DVD's, CD's, and News papers various types of competitive exam related books along with it 'Diwali Issues' are too introduced for the taste of local literature.

AS a part of education oriented programme our library launches 'Network Resource Centre' i.e. NRC attached with INFLIBNET & MHRD. These are main educational sources of UGC and Govt. of India. Through this programme, students of college, researchers, faculty members' users in various fields of knowledge can use these books and journals likely called e-books and e-journals in this programme. Library has introduced "Earn and Learn" scheme. In which students are given encouragement to stand on their feet economically. So they can earn. These living even while they learn they are assigned with the works like filling in the online application forms during admission process and scholarship forms too.

Like every year this year too "Vaachan Prerna Diwas" was celebrated on 14th October 2018. The birth anniversary of Dr. A.P.J. Abdul Kalam and quiz contest was also organized for students and winning team was gifted with books at the hands of the respected Principal Sir. "14 Tas Abhyas Vikasayacha Dhyas" is a best practice of the college library every year gives its 100% for the success of this programme. Which happens to be on 14th April on the birth anniversary of Dr. Babasaheb Ambedkar. Students of college gathered in Auditorium hall and studied continuously from 5.00 a.m to 7.00 p.m. This shows the devotion in any discipline to achieve a goal. As a part of 'World Book Day' celebrated on 23rd April. We organised 'Books Exhibition'. In books exhibition various types of books of competitive examination, MPSC, UPSC, G.K are displayed for reading purpose. Students of the collage were present on this occasion. 'Best Reader' award is also awarded every year. We displayed great thoughts by great thinkers every day. New arrival of book is displayed on display board. We develop the students for culture activity. Every year we celebrate the birth anniversary of father of library Science Dr. S.R. Ranganathan. This year "Creative Writing Competition" was organized by library in association with Department of Languages for students to enhance the skill of writing.

Mr. Mangesh R. Ubale
Librarian
Library & Information Centre

DEPARTMENT OF MATHEMATICS

REPORT

Department of Mathematics is one of the major department of Shri R.L.T. College of Science and is having granted PG course. The research activity in Mathematics is also run by the department under the guidance of Dr. S.M. Padhye (former H.O.D.). Some of the important educational activities and achievements of students and faculty members of the department during the session 2018-19 are highlighted as below.

In the session 2018-19 the college reopened on 14.06.2018. All the teachers and staff joined at 11.00 am in the morning and started their respective works.

- Departmental staff :
 - (i) Ms. S.B. Tadam (H.O.D. & Asst. Prof.)
 - (ii) Dr. S.L. Munde (Assistant Prof.)
 - (iii) Mr. Gautam Ingole (Non-teaching)
- The admission process of B.Sc.I and M.Sc.II started on 14.06.2018
- All the teachers started their works of respective college committees.
- Students strength of the department :

Sr.No.	Class	No. of students	No. of sections
1	B.Sc.I	214	2
2	B.Sc.II	185	2
3	B.Sc.III	153	1
4	M.Sc.I	96	1
5	M.Sc.II	87	1
	Total	735	7

- Number of C.H.B. teachers : 10 (4 for P.G. and 6 for U.G.)
- Academic activities like Seminars, Project Assignment and Group discussions were conducted for B.Sc. I, II & III, M.Sc. I & II students in the month of September and October 2018 and February & March 2019.
- A Regional Mathematics Olympiad examination is conducted by the department every year for the students of 9th, 10th and 11th standard of the Amravati region.
This year the exam was conducted on 7th October 2018.

- Mathematics Teachers Association (MTA), Department of Mathematics of S.G.B.A.U. Amravati and Department of Mathematics, Shri R.L.T. College of Science, Akola jointly organized University Level Seminar Competition for P.G. Students on the topic “**TOPOLOGY**” at department of Mathematics, Shri R.L.T. College of Science, Akola on Tuesday 12th of March 2019.

The President for this function was Dr. R.B. Heda, President of Berar General Education Society, Akola. The Inaugurator for this seminar competition was Prof.V.T.Hajare, Executive member of BGE Society. Chief Guest was Shri W.G. Naikwade, Ex officiating Principal Shri R.L.T. College of Science, Akola. Guest of honors for this function were former faculties of the mathematics department of Shri R.L.T. college of science Prof. V.L. Ruiwale, H.O.D. Dr. S.M. Padhye and H.O.D. Dr. S.W. Bhaware. Also the dais was graced with the presence of dignitaries like Executive members of BGE Society Prof. Shrikrushna Amravatkar, Eng. Abhijeet Paranjape, Shri. Pawan Maheshwari, Shri. Shardul Digambar, Chief Organizer and Head, Department of Mathematics S.G.B.A.U. Amravati Dr. S.D. Katore, Principal of Shri R.L.T. College of Science, Akola Dr. V.D. Nanoty, Secretary of MTA and Head, department of Mathematics of Aadarsh Mahavidyalaya Dhamangaon Dr. S.N. Bayaskar, Head, department of Mathematics of Dr. R.G. Rathod Mahavidyalaya Murtizapur Dr. A.S. Nimkar, NAAC Coordinator of Shri R.L.T. College of Science Dr. R.L. Rahatgaonkar, Convenor and Head, department of Mathematics of Shri R.L.T. College of Science Ms. S.B. Tadam and College Development Committee member Shri D.J. Wankhade.

Dr. S.D. Katore (Chief Organizer) delivered introductory speech. Ms. S.B. Tadam (Convenor) briefed about the complete events of the day. Principal Dr. V.D. Nanoty formally welcomed all the dignitaries on the dais, guests, participants and teachers of various colleges. The inaugural speech was delivered by Prof. V.T. Hazare.

After this, release of the booklet under the title “**HIGHLIGHTS OF MATHEMATICIAN**” was done at the hands of the dignitaries on the dais.

Followed by this to pay the homage to our mathematics teachers the felicitation and honoring of the Ex Principal Late Shri M.G. Joshi sir, Late Shri N. V. Bhat, Late Shri A.V. Digambar, and Late Shri R.S. Suley was done. To pay the token of respect gratitude Ex professors Dr. S.M. Padhye, Dr. S.W. Bhaware & Prof. V.L. Ruiwale was felicitated by offering shawl, shrifal and memento. The MTA of S.G.B.A.U. honored Prof. W.G. Naikwade by **Life Time Achievement award** by the hands of Dr. R.B. Heda with Shawl, Shrifal and Sanman Patra. Dr. Samadhan Munde delivered vote of thanks.

Total 33 participants from 13 colleges of S.G.B.A.U. delivered seminar. The consolation prizes were won by **Ms. Vaishnavi Bisne**, Aadarsh College Dhamangaon and **Mr. Jamshed Jalil**, Shri Shivaji Arts, Commerce and Science, College Akola. Third prize was given to **Mr. Kailas**

Rindhe, Department of Mathematics, S.G.B.A.U. Amravati. Second prize was won by **Ms. Megha Waghode**, Shri R.L.T. College of Science, Akola. **Ms. Vaishnavi Magarde** from Vidya Bharti College, Amravati won the first prize.

- The Mathematical Sciences are known as the most exact sciences and some of its century old theories are use to this date. For this reason we would like to go over some of the greatest contribution and achievement in the history of Mathematics from ancient to modern mathematicians. Mathematicians Contribution and achievement in the field of mathematics inspire the students. In the same context department organised the **Poster Gallery of different Mathematicians** entitled “**HIGHLIGHTS OF MATHEMATICIAN**”. Ten groups of each M.Sc.I and II students were formed. Each group was allotted one separate Mathematician. The corresponding group collect the information of respective mathematician and then present it in the form of posters.

This poster gallery exhibition was organised on 12th March 2019. The exhibition was inaugurated at the hands of Dr. R.B. Heda, President of Berar General Education Society, Akola, Prof. V.T. Hajare, Executive member of BGE Society, Dr. S.D. Katore, H.O.D. department of Mathematics S.G.B.A.U. Amravati in presence of Principal Dr. V.D. Nanoty, former faculty members of the department Prof. W.G. Naikwade, Dr. S.M. Padhye, Dr. S.W. Bhaware & Prof. V.L. Ruiwale. All the dignitaries, teachers and students visited the exhibition. When students collect the information about mathematician they highly impressed, get motivated by this mathematicians and hence they became more interested in mathematics. Thus the purpose of taking poster Exhibition was achieved here.

- Two students of B.Sc. II namely Ku. Aarti D. Katore & Ku. Samruddhi S. Mulay were participated in University Level Seminar Competition for U.G. students at Dr. R.G. Rathod Arts and Science College, Murtizapur on 19th January 2019.
- Five students of M.Sc. namely Mr. Eknath M. Dolse, Mr. Sohail Ali Riyaz Ali, Mr. Ankush S. Palaspagar, Mr. Pradip R. Thombare and Mr. Vivek R. Jadhao along with one teacher Ms. S.B. Tadam participated in National Workshop on Number Theory at Dr. R.G. Rathod Arts and Science College, Murtizapur on 19th January 2019.
- Dr. S.L. Munde participated in Two Day State Level Workshop on “Soft Skills Training for Mathematical Sciences (Mathematical Practices Using ICT & Computational Tools) at S.G.B.A.U. Amravati during March 15-16 2019.
- Five students of M.Sc. namely Mr. K.V. Naralkar, Mr. V.R. Jadhao, Mr. E.M. Dolse, Mr. A.S. Palaspagar and Mr. P.R. Thombare were participated in State Level Workshop on “Advanced Abstract Algebra” held at S.G.B.A.U. Amravati during March 16-17, 2019.

श्री राधाकिसन लक्ष्मीनारायण तोष्णीवाल विज्ञान महाविद्यालय, अकोला

- During the session 2018-19 the achievements of the department are shown in the following table.

Sr. No.	Name of Faculty/ Students	Designation/ Class	Achievements
1.	Dr. Sujata B. Tadam	Assistant Prof. & H.O.D.	Worked as a Convenor for University Level Seminar Competition for P.G. Students organised by Department of Mathematics, Mathematics Teachers Association (MTA) of S.G.B.A.U. Amravati and department of Mathematics, Shri R.L.T. College of Science, Akola on the topic " TOPOLOGY " on Tuesday 12 th of March 2019.
2.	Dr. Samadhan L. Munde	Assistant Prof.	Worked as a Resource person in Refresher Course in Disaster Management (ID) (for all subjects) on 14.12.18 organised by UGC-Human Resource Development Centre, S.G.B.A.U. Amravati.
3.	Dr. Satish B. Khobragade	Research Scholar & C.H.B. Teacher	Awarded with Ph.D. Degree in the subject Mathematics under the guidance of Former HOD Dr. S.M. Padhye. Title of the thesis is " Study Of Cantor, Cantor Like Sets, Their Dimensions And Their Applications ".
4.	Mr. Dhananjay R. Sakhare	PG Student	Qualified the State Eligibility Test (SET) held on 28 th January 2018 in the subject Mathematical Sciences.
5.	Ku. Kanchan D. Panjawani	PG Student (2017-18)	10 th Merit in M.Sc. Mathematics S.G.B. A.U. Amravati
6.	Ku. Ishwari D. Virulkar	PG Student (2017-18)	10 th Merit in M.Sc. Mathematics S.G.B. A.U. Amravati

- **A Report on University Level Seminar Competition for P.G. Students**

Aiming to improve communication skills, gaining expert knowledge, networking with all the students of University and renewing motivation and confidence, department of Mathematics, Mathematics Teachers Association (MTA) of S.G.B.A.U. Amravati and department of Mathematics, Shri R.L.T. College of Science, Akola jointly organized University Level Seminar Competition for P.G. Students on the topic "**TOPOLOGY**" at department of Mathematics, Shri R.L.T. College of Science, Akola on Tuesday 12th of March 2019.

The day began with the registration of guests, participants and teachers of various colleges of S.G.B.A.U. Amravati followed by break-fast. The Inauguration Function started with the arrival of guests at 10.30 pm. The President for this function was Dr. R.B. Heda, President of Berar General Education Society, Akola. The Inaugurator for this seminar competition was Prof. V.T. Hajare, Executive member of BGE Society. Chief Guest was Shri W.G. Naikwade, Ex officiating Principal Shri R.L.T. College of Science, Akola. Guest of honors for this function were former faculty of the mathematics department of Shri R.L.T. College of Science Prof. V.L. Ruiwale, H.O.D. Dr. S.M. Padhye and H.O.D. Dr. S.W.

Bhaware. Also the dais was graced with the presence of dignitaries like Executive members of BGE Society Prof. Shrikrushna Amravatkar, Eng. Abhijeet Paranjape, Shri Pawan Maheshwari, Shri Shardul Digambar, Chief Organizer and Head, department of Mathematics S.G.B.A.U. Amravati Dr. S.D. Katore, Principal of Shri R.L.T. College of Science, Akola Dr. V.D. Nanoty, Secretary of MTA and Head, department of Mathematics of Aadarsh Mahavidyalaya Dhamangaon Dr. S.N. Bayaskar, Head, department of Mathematics of Dr. R.G. Rathod Mahavidyalaya Murtizapur Dr. A.S. Nimkar, NAAC Coordinator of Shri R.L.T. College of Science Dr. R.L. Rahatgaonkar, Convenor and Head, department of Mathematics of Shri R.L.T. college of science Ms. S.B. Tadam and College Development Committee member Shri D.J. Wankhade. The function began with lamp lighting and garlanding to lord Saraswati, Sant Gadge Baba and Great Mathematician Shrinivasa Ramanujan by a group of dignitaries on the dais. The program was followed by University Song. All the dignitaries on the dais were welcomed with a sapling.

Dr. S.D. Katore (Chief Organizer) gave an introductory speech. He mentioned about the significance of University Level Seminar Competition and its aims about bringing together a group of students from all over university with a significant participation. As an alumna of this college, he reminisces of the memories of Principal Late Shri M. G. Joshi. Also he said that **"Mathematics is very easy subject when we understand it"**. Ms. S. B. Tadam (Convenor) briefed about the complete event of the day. She mentioned that Department of mathematics of this college is the oldest granted department of this university.

Principal Dr. V.D. Nanoty formally welcomed all the dignitaries on the dais, guests, participants and teachers of various colleges. He said that **Prof. Naikwade is the teacher who maintaining aliveness in his teaching.**

The inaugural speech was delivered by Prof. V.T. Hazare. He described the importance of mathematics in real life. He wished for the success of the seminar competition and gave best wishes to all the participants. Also he declared the commencement of the seminar competition.

After this, release of the booklet under the title **"HIGHLIGHTS OF MATHEMATICIAN"** was done at the hands of the dignitaries on the dais. This booklet highlights the Mathematician and their contribution in Mathematics.

Followed by this, the felicitation and honoring of all former Mathematics teachers of this college was done. To pay the homage to our mathematics teachers the felicitation and honoring of the Ex Principal Late Shri M.G. Joshi sir, Late Shri N. V. Bhat, Late Shri A.V. Digambar, and Late Shri R.S. Suley was done. To pay the token of respect gratitude Ex professors Dr. S. M. Padhye, Dr. S. W. Bhaware & Prof. V.L. Ruiwale was felicitated by offering shaal, shrifal and memento. The MTA of S.G.B.A.U. honored Prof. W.G.Naikwade by **Life Time Achievement award** by the hands of Dr. R.B.Heda with shaal, shrifal and sanman patra. The words of homage was given by Ms. S. B.Tadam. Responding to the felicitation, Prof. W.G. Naikwade said a few words. He urged the students to focus more on writing and learning mathematics by practicing.

The presidential speech was delivered by Dr. R.B. Heda. In his speech he took the opportunity to guide the audience with the bright history of the institution and how has its rightful place in the society

by serving at different levels. He also encouraged the students to work hard and succeed.

Dr. Samadhan Munde delivered a vote of thanks to all the dignitaries on the dais and of the dais. He thanked all the invited guests, teachers and participants for gracing the occasion by their solemn presence. The inauguration function was conducted by Ms. Asma Fatima and Mrs. Suchita A. Mohta.

After the inaugural function, the guests were taken for the inauguration of the poster Gallery of different Mathematician. All the P.G. students of the department of Mathematics of Shri R.L.T. College of Science, Akola collectively prepared posters of Mathematicians showing their contribution in mathematics.

After this the seminars began in digital rooms 1,2,3 & 4 along with a class room number 16 for those participant who needed green board for presentation. Total 33 participants from 13 colleges of S.G.B.A.U. delivered seminar in the first round. The first round took place between 12:30 pm to 2:00 pm after which there was a lunch break till 3:00 pm. All the students, participants, teachers and delegates enjoyed delicious lunch.

The second and final round began sharply at 3:15 pm in the auditorium hall in which ten participants from different rooms were selected. Dr. Nimkar and Dr. Bayaskar were worked as a judge for this round.

The valedictory function was presided by honorable Principal Dr. V.D. Nanoty. The dais was graced by Prof. V.L. Ruiwale, Dr. S.M. Padhye and Dr. S.W. Bhaware, Dr. S.D. Katore, Dr. S. N. Bayaskar, Dr. A.S. Nimkar and Ms. S.B.Tadam. Sum up of the day's activities was given by Ms.S.B. Tadam. Participants gave the good feedback for the days program. They were highly impressed by well managed nicely planned event of seminar competition. Also they were satisfied about the discussion on the topic Topology among the students and teachers of various colleges of the university. In the feedback, jury member Dr. S. N. Bayaskar briefed on the participants performance, subject knowledge, and confidence. Later on the prizes were announced.

The consolation prize was won by **Ms. Vaishnavi Bisne**, Aadarsh College Dhamangaon and **Mr. Jamshed Jalil**, Shri Shivaji Arts, Commerce and Science, College Akola. Third prize was given to **Mr. Kailas Rindhe**, department of Mathematics S.G.B.A.U. Amravati. Second prize was won by **Ms. Megha Waghode**, Shri R.L.T. College of Science, Akola. **Ms. Vaishnavi Magarde** from Vidya Bharti College, Amravati won the first prize.

The program concluded by vote of thanks by Ms. S.B.Tadam. She thanked all the invited guests, teachers and participants for gracing the occasion by their solemn presence. Also she thanked to BGE Society Akola, NCTC, DST, Govt. of India, RGSTC, Govt. of Maharashtra and Sant Gadge Baba Amravati University, Amravati and NMD-2018 for providing all kinds of facilities to conduct this seminar competition in Shri R.L.T. College of Science, Akola. Under the guidance of Principal Dr. V. D. Nanoty all the teaching and non-teaching staff of the college were worked hard to make this event successful.

Dr. Sujata B. Tadam
Head
Department of Mathematics

DEPARTMENT OF MICROBIOLOGY

REPORT

Department of Microbiology, Shri R.L.T. College of Science, Akola delivers excellent education through dedicated collaborated efforts towards achieving recognition and honor at varied levels. We strive for providing advanced academic environment, innovative techniques and creating value based globally competitive expertise through well directed honest efforts.

As every year, this year too there has been enormous strength of students willing to be admitted to department. The department has strength of 365 students at UG level, 45 students at PG level. As a part of curriculum all theory and practical classes were started in mid of July 2018. The Department also runs the Career Oriented Program (CCLT, DCLT & ADCLT) to which total 142 students are admitted this year.

The department inspires students for hard work and sincerity by all possible means. The students are encouraged for good work in different fields and duly awarded for their bright accomplishment. The brilliant results and splendid achievements of every year signify the ultimate goal of the department towards the world of education and society.

The department creates the right environment to nurture their exceptional talents.

- Dr. V. D. Nanoty (Principal, Shri. R.L.T. College of Science) is Ph.D. supervisor in field of Microbiology and Biochemistry.
- Dr. V.D. Nanoty worked as Resource person and delivered invited talk in One Day National Conference in New Methodology of NAAC assessment to nurture Quality enhancement in higher educational institution at Smt. LRT College of Commerce, Akola on date 29th Sept. 2018.
- Dr. V.D. Nanoty worked as Resource person and delivered invited talk in Prerna, State level Leadership Development program SGB Amravati University, Amravati on date 23-27 Sept. 2019.
- Dr. V.D. Nanoty worked as Resource person in State Level seminar on Frontiers in Microbiology and Annual Microbiology's Meet 2018 at HPT Arts and RYK Science College, Nashik. On date 20-21 Oct. 2018.
- Dr. V.D. Nanoty presented a paper in National conference on Recent trends in Life Sciences for Sustainable development at SGB Amravati University, Amravati on date 22-23 Jan. 2019.
- Dr. Umesh Bhalekar presented a paper in National symposium on Bio waste as Bio resource at Shankarlal Khandelwal College, Akola held on 23rd Feb. 2019.
- Dr. Umesh Bhalekar presented a paper in National conference on Recent trends in Life Sciences for Sustainable development at SGB Amravati University, Amravati on date 22-23 Jan. 2019.

- Dr. Umesh K. Bhalekar (Head, Department of Microbiology) is recognized Ph.D. Guide for the research field of Microbiology and Biochemistry.
- The faculty & researchers of the department are actively involved in Paper publications and Paper presentations and keeps on attending various National and International conferences.
- Dr. Harish Malpani actively participated in One Day National Conference on New Methodology of NAAC assessment to Nurture Quality enhancement in Higher educational Institution held at Smt. LRT College of Commerce, Akola on 29 Sept. 2018
- Dr. Harish Malpani attended a webinar on Trends in Genetic modification organized by Badrinarayan Barwale Mahavidyalaya on 9th Feb. 2019.
- Dr. Harish Malpani actively participated in One day state level symposium on Research supervisor under new guideline: duties & Role held at Govt. Vidarbha Institute of Science and humanities. Amravati on 5th April 2019.
- Dr. Harish Malpani attended One day National workshop Level seminar cum Workshop on Soap and Perfume making organized by department of chemistry, Shri. R.L.T. College of science, Akola on date 9th Sept. 2018.
- Dr. Harish Malpani presented paper in 106th Indian Science Congress at Lovely Professional University, Phagwara, Punjab on date 3-7 January 2019.
- Dr. Harish Malpani presented paper in National symposium on Bio waste as Bio resource at Shankarlal khandelwal college, Akola held on 23rd Feb. 2019.
- Dr. Harish Malpani published a paper entitled with a study of solid waste management in Infoscience Vol.1 Issue 1.
- Dr. Harish Malpani published a paper entitled with Microbiological study of waste disposal and its efficient management Sp Issue 110(E) Feb. 2019.
- Dr. Harish Malpani work as organizing secretary for State level seminar and Teachers Workshop on teaching constraints in microbiology and allied sciences held at 28th Feb 2019 at Shri. R.L.T. College of Science, Akola.
- Dr. Harish Malpani successfully completed induction program (University and P.G. College M.Sc. Teachers Training Program in Biology/ Life Science Equivalent to Refresher Course) held at Centre of Excellence in science and Mathematics education. **Indian Institute of Sciences**, Challakere Campus at Kudapura Chitradurga (Karnataka) with "A" grade on date 7-27th June 2019.
- Ms. Sonali Gawande attended International conference on Microbiome Research NCCS, Pune on date 19-22 Nov. 2018.
- Ms. Sonali Gawande attended One day National workshop Level seminar cum Workshop on Soap

Achievements

Name of Faculty / Student	Designation	Achievements
Dr. V. D. Nanoty	Principal	Appointed as Member of Board of Studies, Biochemistry inclusive of Microbiology at SGBAU, Amravati
		Appointed as Member of NSS advisory committee of SGBAU, Amravati.
		Appointed as Coordinator of Microbiologist Society India of Amravati Chapter.
		Ms. Purnima Chitlange awarded with Ph.D. on date 29/9/2018
Dr. U.K. Bhalekar	Head, Associate Professor	Appointed as Member of Board Of Studies, Biochemistry inclusive of Microbiology at SGBAU, Amravati
		Delivered an invited talk in NSS Camp at Apatapa on date 18/12/2018
Dr. H. S. Malpani	Assistant Professor	Appointed as College Coordinator of Microbiologist Society India.
		Completed 21 day PG teacher's Training Program in Biology at Indian Institute of Sciences, Bangalore Kudapura Campus with A Grade.
		Delivered an invited lecture in NSS camp at Apatapa on 'AIDS Awareness' on date 18/12/2018.
		Successfully submitted 16s rRNA sequences of two novel bacteria at National Centre for Biotechnology Information (NCBI) USA.
Ms. S.N. Gawande	Assistant Professor	Worked as Women Team Manager (Shri R.L.T. College of Science) in Youth Festival SGB Amravati University, Amravati on date 27/9/2018
Ms. Pallavi Sonone	B.Sc. II	Got 3 rd prize in poster presentation in State Level Competition on date 28 th Feb 2019
Ms. Apurva Shah	B.Sc. III	Awarded for being Best Student of Microbiology (U.G.) by Microbiologist Society India.
Ms. Mrunali Kashid	M.Sc. II	1 st Merit position in M.Sc. Microbiology exam. of SGB Amravati University, Amravati.

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Ms. Shruti Joshi	M.Sc. II	4 th Merit position in M.Sc Microbiology exam. of SGB Amravati University, Amravati.
Ms. Shubangi Laghe	M.Sc. II	5 th Merit position in M. Sc Microbiology exam. of SGB Amravati University, Amravati.
Ms. Kanchan Mangtani	M.Sc. II	Selected for State Level Research Festival 'Avishkar' At Gondwana University, Gadchiroli.
		Awarded with Best Student of Microbiology (P.G.) by Microbiologist Society India.
Ms. Shrutika Chandak	M.Sc. II	Selected for State level Research Festival 'AVISHKAR' at SGBAU, Amravati
Ms. Krashna Laddha	M.Sc. II	Selected for State level Research Festival 'AVISHKAR' At SGBAU, Amravati
Ms. Roshani Kadam	M.Sc. I	Selected for State level Research Festival AVISHKAR' At SGBAU, Amravati
Ms. Sonali Bawane	M.Sc. II	Successfully submitted 16s rRNA sequences of two novel bacteria at National Centre for Biotechnology Information (NCBI) USA.
Ms. Ankita Lokhande	M.Sc. II	
Ms. Pranita Gawande	M.Sc. II	Joined National Institute of Virology, Pune.
Ms. Diksha Choube	M.Sc. II (2017)	Qualified CSIR – NET June 2018

MICRANS

(Microbiology Innovative Creations by Research Array for Nobel Scholars)

MICRANS is a society formed by the collaboration of Department of Microbiology, Shri R.L.T College of Science, Akola and Microbiologist Society India. MICRANS aims to bring the academic knowledge of students on a social level. It encourages the students towards welfare of common people. MICRANS guides the students to assist the society about health prospective.

Following activities were organized and conducted successfully by the department of microbiology and biochemistry under MICRANS in association with microbiologist society India.

- **Inauguration of MICRANS Unit** : [29-08-2018] - MICRANS was inaugurated by Dr. A B. Ingle [S.K. Porwal College, Kampti], Dr. V.D. Nanoty [President, Microbiologist Society of India, Amravati Chapter] and all the members were felicitated Dr. U.K. Bhalekar, Dr. Harish Malpani, Ms. Sonali Gawande guided student in the event.

- **Eco-friendly Ganesha Idol preparation** : [06-09-2018] MICRANS and Department of Microbiology in collaboration with Department of Social Forestry & Nisarg Katta, Akola organized "One day workshop on Eco-friendly Ganesha Idol preparation." Total 110 candidates participated in the workshop.
- **Blood Grouping** : [24-12-2018] - Late principal M.G. Joshi Memorial Day was observed as Blood grouping day. Blood samples were collected by microbiology student under the guidance of expert's team. Total 121 blood grouping were done by the members of MICRANS.
- **Diabetic Camp** : [06/01/2019] The B.G.E. Society & Department of Microbiology, Shri. R.L.T. College of Science, Akola organized a diabetic camp for the welfare of society. Blood glucose was tested by using Digital Glucometer. Total 135 Beneficiary visited & checked Blood glucose level under the supervision of Dr. Nanasaheb Chaudhary (Life Member).
- **National Science day** : [28-02-2019]-Department of Microbiology in collaboration with MICRANS unit & IQAC of R.L.T. College of Science organized the National Science Day. On this occasion, a state level seminar on "My Health My Responsibilities" and teacher's workshop on "Teaching Constrains in Microbiology and Allied Sciences" were conducted. A poster competition for B.Sc.II year was organized on topic "My Health My Responsibilities". Dr. Arvind Deshmukh and Dr. Shiva Aithal addressed the event. Around 325 participants benefitted from the event.

Dr. Umesh K. Bhalekar
Head, Department of Microbiology
In-charge, P.G. Dept. of Microbiology

DEPARTMENT OF PHYSICAL EDUCATION

REPORT

Individual Students and Teams participated in Inter Collegiate Tournaments & Selection Trials of Sant Gadge Baba Amravati University, Amravati.

The details are given as follows.

Sr. No.	Name of Students	Class	Event
1	Yadav Ajay R.	B.Sc.I	Volleyball
2	Duryodhan Sanket V.		Volleyball & Football
3	Janorkar Aditya R.		Volleyball
4	Nimbalkar Vaishnavi M.		Wrestling & Judo
5	Gayki Arti R.		Wrestling
6	Choudhari Bhagyshri		Wrestling & Judo
7	Jain Akash B.		Kabaddi
8	Tewale Vaibhav S.		Kabaddi
9	Rathod Sumit S.		Kabaddi
10	Dhore Yadnesh S.		Football
11	Kate Pratik K.		Football
12	Gawai Bhushan V.		Football
13	Parbhanikar Ram S.		Football
14	Sarap Pawan A.		Athletics
15	Kokane Gopal R.		Athletics
16	Bhate Rucha A.		Badminton
17	Murtadkar Swapnil S.		Badminton
18	Tiwari Kshitij A.		Boxing
19	Wawge Mrunali G.		Kabaddi
20	Sangunwedhe Kalyani P.		Handball
21	Sayre Abhijit P.		Taekwondo
22	Waghamare Prashant V.		Lawn Tennis
23	Tiwari Hrushikesh B.		Handball
24	Wankhade Shubham P.	B.Sc.II	Volleyball
25	Sawale Ankit R.		Volleyball & Football
26	Sule Rohit R.		Volleyball

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27	Mehare Akash R.	B.Sc.II	Volleyball & Kabaddi	
28	Tale Shivshankar J.		Volleyball & Kabaddi	
29	Matarmare Shubham G.		Wrestling & Judo	
30	Ghonge Sadanand P.		Wrestling & Judo	
31	Telgote Dipankar R.		Wrestling & Judo	
32	Harimkar Neha S.		Wrestling & Judo	
33	Sunariwal Himanshu K.		Kabaddi	
34	Talokar Rushikesh S.		Volleyball & Kabaddi	
35	Gawande Mahesh G.		Kabaddi	
36	Dhore Rushikesh P		Kabaddi	
37	Neware Rushikesh M.		Football	
38	Thakur Shantanu D.		Football	
39	Dinode Vrushabh M.		Football	
40	Dahibhate Shyam S.		Athletics	
41	Lokhande Abhishek J.		Athletics	
42	Kalamb Mangesh M.		Chess & Athletics	
43	Pawar Anjali V.		Badminton	
44	Sanghai Damini D.		Badminton	
45	Darmode Pawan D.		Badminton	
46	Dange Rohit G.		Badminton	
47	Pujara Harsh C.		Badminton	
48	Mulay Samruddhi S.		Judo	
49	Nilkhan Nikhil S.		Chess	
50	Ingle Sheryas S.		Chess	
51	Kalbande Pradip J.		Chess	
52	Awachr Manisha M.		Archery	
53	Khurania Balraj B.		Boxing	
54	Pote Ruchiket A.		Boxing & Power Lifting	
55	Dofe Pratik G.		Taekwondo	
56	Mahalle Nana D.		Basketball	
57	Lunge Pratiksha D.		Table Tennis	
58	Sarap Ravina R.		Table Tennis	
59	Khawane Swaraj R.		B.Sc.III	Volleyball
60	Gite Tushar H.			Wrestling & Judo

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61	Kalalkar Priya S.	B.Sc.III	Wrestling & Judo
62	Raut Godavari M.		Wrestling
63	Jadhav Shivani M.		Wrestling
64	Khendkar Akash B.		Kabaddi
65	Murtadkar Shyam S.		Kabaddi & Judo
66	Neware Ankit G.		Football
67	Waghmare Suraj S.		Football
68	Ingole Saurabh S.		Football
69	Sabale Krishna M.		Football
70	Pawar Rohini V.		Athletics
71	Damodar Sachin B.		Badminton
72	Vidyasagar Yash D.		Badminton
73	Varma Ghanshyam D.		Table Tennis
74	Akot Gaurav R.		Table Tennis
75	Bais Harshal A.		Table Tennis
76	Shelke Akshay S.		Chess
77	Karale Vaibhav K		Weight & Power Lifting
78	Vishwakarma Ritu R.		Handball
79	Tayde Ankita P.	M.Sc.I	Badminton
80	Gawai Karika D.	(Maths)	Judo
81	Gawande Sagar P.	M.Sc.II	Volleyball & Athletics
		(Maths)	

Achievements of Students

Sr. No.	Name	Class	Achievements
1	Ms. Mrunali Wawge	B.Sc.I	<p>Colour in Kabaddi Participated in West Zone Inter University Tournament held at Swami Ramanand Teerth Marathwada University, Nanded (Dayanand Arts College, Latur) from 10.11.2018 to 14.11.2018.</p> <p>22nd Maharashtra State Inter University Sports Festival 2018 held at University of Mumbai from 12/02/2019 to 18/02/2019.</p>

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2	Ms. Kalyani Sangunwedhe	B.Sc.I	Colour Coat in Handball Participated in West Zone Inter University Tournament held at Savitribai Phule Pune University, Pune from 29.10.2018 to 01.11.2018
3	Mr. Kshitij Tiwari	B.Sc.I	Colour Coat in Boxing Participated in All India Inter University Tournament held at Janardan Rai Nagar Rajasthan Vidyapeeth, Udaipur (Raj.) from 23.02.2019 to 28.02.2019.
4	Ms. Bhagyshree Choudhari	B.Sc.I	Colour Coat in Wrestling (62 Kg. Wt. Category) Participated in All India Inter University tournament held at Dr. Babasaheb Ambedkar Marathwada University, Aurangbad from 03.11.2018 to 05.11.2018.
5	Mr. Ruchiket Pote	B.Sc.II	Colour Coat in Power Lifting (120 Kg. above Wt. Category) Participated in All India Inter University Tournament held at University of Calicut, (Kerla) 20.02.2019 to 23.02.2019.
6	Ms. Shivani Jadhao	B.Sc.III	Colour Coat in Wrestling (57 Kg. Wt. Category) Participated in All India Inter University tournament held at Dr. Babasaheb Ambedkar Marathwada University, Aurangbad from 03.11.2018 to 05.11.2018.
7	Ms. Priya Kalalkar	B.Sc.III	Colour Coat in Wrestling (50 Kg. Wt. Category) Participated in All India Inter University tournament held at Dr. Babasaheb Ambedkar Marathwada University, Aurangbad from 03.11.2018 to 05.11.2018.
8	Mr. Vaibhav Karale	B.Sc.III	Colour Coat in Weight Lifting (89 Kg. Wt. Category) Participated in All India Inter University Tournament held at University of Calicut, (Kerla) from 17.11.2018 to 20.11.2018.
9	Ms. Bhagyshree Choudhari Ms. Godavai Raut Ms. Shivani Jadhao Ms. Priya Kalalkar	B.Sc.I B.Sc.III B.Sc.III B.Sc.III	“ UNIVERSITY CHAMPION” Continuous Second Time our College won Wrestling Women Championship 2018-2019 of Sant Gadge Baba Amravati University, Amravati and Three wrestlers awarded Colour Coat, Gold & Silver Medals.
10	Ms. Karika Gawai	B.Sc.III	Silver Medal in Judo in Inter Collegiate Judo Tournament of S.G.B. Amravati University, Amravati held at D.C.P.E. Amravati.

11	Mr. Ruchiket Pote	B.Sc.II	Silver Medal in Boxing in Inter Collegiate Boxing Tournament of S.G.B. Amravati University, Amravati held at D.C.P.E. Amravati.
12	Mr. Tushar Gite	B.Sc.III	Bronze Medal in Judo in Inter Collegiate Judo Tournament of S.G.B. Amravati University, Amravati held at D.C.P.E. Amravati.
13	Mr. Shubham Mhatarmare	B.Sc.II	Bronze Medal in Judo in Inter Collegiate Judo Tournament of S.G.B. Amravati University, Amravati held at D.C.P.E. Amravati.
14	Mr. Abhijit Sayre	B.Sc.I	Bronze Medal in Taekwondo in Inter Collegiate Taekwondo Tournament of S.G.B. Amravati University, Amravati held at Sipna College of Engg., Amravati. Gold Medal in Ashtedo Akhada National & International Tournament, Goa.
	Best Sportsman Special Achievement : Mr. Vaibhav Kailash Karale	B.Sc.III	Awarded with three Colour Coat in Weight Lifting & Power lifting for College 2016-2017, 2017-2018 & 2018-2019.

International Yoga Day :

International Yoga day was celebrated on 21st June 2018. All students and staff members attended this programme. Yoga related Information is delivered by Dr. Rajesh Chandrawanshi through PPT presentation. Asan's practice was conducted in healthy atmosphere.

National Sports Day :

National Sports Day was celebrated on 29th August 2018. Students participated in Chess, Badminton, Table Tennis, Skipping Rope & Suryanamaskar events from 23rd to 29th August 2018. Friendly matches of Tug of War were decently organized. Aim of this National Sports Day was to motivate students in Sports Activities & Create atmosphere of Sports.

National Sports Day 29th August 2017

Sr.No.	Event	Name	Class	Place
1	Suryanamaskar	Miss. Godavari Raut (51)	B.Sc.III	First
2	Women	Miss. Priya Kalalkar (36)	B.Sc.III	Second
3		Miss. Shivani Jadhav (20)	B.Sc.III	Third

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4	Suryanamaskar Men	Mr. Sagar Gawande (101)	M.Sc.III	First
5		Mr. Shreyas Ingle (85)	B.Sc.II	Second
6		Mr. Shubham Mhatarmare (80)	B.Sc.II	Third
7	Table Tennis Women	Miss. Pratiksha Lunge	B.Sc.II	First
8		Miss. Ravina Sarap	B.Sc.II	Second
9	Table Tennis Men	Mr. Harshal Bais	B.Sc.III	First
10		Mr. Ghanshyam Verma	B.Sc.III	Second
11	Badminton Women	Miss. Ankita Tayde	M.Sc.I	First
12		Miss. Rucha Bhate	B.Sc. I	Second
13	Badminton Men	Mr. Yash Vidyasagar	B.Sc.III	First
14		Mr. Sachin Damodar	B.Sc.III	Second
15	Chess M & W	Mr. Nikhil Nilkhan	B.Sc.II	First
16		Mr. Shreyas Ingle	B.Sc.II	Second
17	Skipping Rope Women	Miss. Anjali Pawar (204)	B.Sc.II	First
18		Miss.Rohini Pawar (183)	B.Sc.II	Second
19		Miss.Gayatri Kalamb (152)	B.Sc.I	Third
20	Skipping Rope Men	Mr. Akshay Shelke (1013)	B.Sc.III	First
21		Mr. Nikhil Matre (870)	B.Sc.I	Second
22		Mr. Jay Indore (800)	B.Sc.II	Third
23	Tug of War Women	Miss. Shivani Jadhao	B.Sc.III	First
24		Miss. Godavari Raut	B.Sc.III	Position
25		Miss. Damini Sanghai	B.Sc.II	Total Wt.
26		Miss. Ishwari Hingane	B.Sc.II	317 Kg.
27		Miss. Priya Kalalkar	B.Sc.III	
28		Miss. Anjali Pawar	B.Sc.II	
29		Miss. Vaishanvi Bathe	B.Sc.II	Second
30		Miss. Kirti Bhala	B.Sc.II	Position
31		Miss. Sejal Jaiswal	B.Sc.II	Total Wt.
32		Miss. Pooja Halvadiya	B.Sc.II	338 KG.
33	Miss. Ashwani Akolkar	B.Sc.II		
34	Miss. Anchal Mhaisane	B.Sc.II		
35	Miss. Jayashri Jaybhaye	B.Sc.III		
36	Tug of War Men	Mr. Pawan Mohod	B.Sc.I	First
37		Mr. Vikram Mahakale	B.Sc.I	Position
38		Mr. Gopani Kokane	B.Sc.I	Total Wt.
39		Mr. Nikhil Matre	B.Sc.I	448 Kg.

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40		Mr. Lalit Somwanshi	B.Sc.I	Second Position Total Wt. 443 Kg
41		Mr. Dependra Saini	B.Sc.I	
42		Mr. Yadnesh Dhore	B.Sc.I	
43		Mr. Saurabh Dhole	B.Sc.I	
44		Mr. Deepak Jadhav	B.Sc.I	
45		Mr. Rohit Awadhut	B.Sc.II	
46		Mr. Pawan Band	B.Sc.II	
47		Mr. Shantanu Wankhade	B.Sc.II	
48		Mr. Balraj Khurania	B.Sc.II	
49		Mr. Pawan Shelke	B.Sc.II	
50		Mr. Mayur Jawake	B.Sc.II	
51		Mr. Mangal Mawale	B.Sc.II	

University Level Inter Collegiate Badminton (Men) Tournament :

S.G.B. Amravati University's Inter Collegiate Badminton Tournament (Men) Zone – A was organized on 18th to 21st September 2018. In this championship 112 participants of 27 colleges were participated.

1st Annual Sports Meet 2018-2019 :

1st Annual Sports Meet 2018-2019 was organized by The Berar General Education Society, Akola from 8th to 11th January 2019. The following teams participated in this competition.

Sr.No.	Event	Junior College	Senior College
1	Badminton (Men)	Second Place	Second Place
2	Badminton (Women)	————	First Place
3	Table Tennis (Men)	Second Place	First Place
4	Table Tennis (Women)	————	————
5	Volleyball (Men) Jr.& Sr.	Third Place	
6	Volleyball (Women) Jr.& Sr.	First Place	
7	Kabaddi (Men) Jr.& Sr.	Third Place	
8	Kabaddi (Women) Jr.& Sr.	First Place	

Physical Efficiency Test :

The Physical efficiency Test was conducted in the month of January 2019. **140** Students from B.Sc.I & II participated in this test. Result of this test is as follows.

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	A Grade Certificates	B Grade Certificates
For Men	15	12
For Women	21	61

Medical Examination :

Medical Examination 2018-2019 was conducted in the month of March 2019. **244 Women & 117 Men** have attended this examination.

Self Defense Academy (Innovative Practice) :

Judo, Wrestling, Karate, Boxing, Taekwondo & Stick practice was taken under in this self defense academy. This hard training develops muscular power, stamina, endurance, flexibility, agility of strength of player. Aim of this activity is to develop self defense skill with physical fitness among the students specially for girls as well as in boys. Physically strong young generation is always ready to struggle in any situation.

Achievements of Staff

Sr. No.	Name	Designation	Achievement
1	Dr. Rajesh D. Chandrawanshi	Director of Sports and Physical Education	Recognized as a Supervisor for Ph.D. in Physical Education as per Sant Gadge Baba Amravati University's Notification dated 14 th March 2019.

Resource Persons :

Sr. No.	Name of Resource Person	Key Note Address/ Invite Talk	Name of Institute and Place	Event	Date
01	Dr. Rajesh D. Chandrawanshi	Invite Talk	Mahajan College of Technology & Smt. N.W. Arts College, Yavatmal	International Conference on Recent Trends in Commerce and Humanities	23 rd & 24 th March 2019

Sports Committee Members :

1. Dr. R.D. Chandrawanshi Chairman
2. Dr. R.L. Rahatgaonkar Member
3. Prof. V.N. Badgujar Member
4. Dr. S.B. Tadam Member

Dr. Rajesh D. Chandrawanshi
Director
Physical Education

DEPARTMENT OF PHYSICS

REPORT

In this academic year we are pleased to highlight the following activities / achievements of the Department of Physics.

The department of physics is renovated this year and Inauguration of newly renovated department is done at the hands of Hon. Randheer Sawarkar (MLC Member) in presence of Hon. Viplove Bajoriya (MLC Member) on the occasion of death anniversary of late principal M.G. Joshi sir on 24th Dec. 2018. It was a good opportunity for the students offering physics to participate in the activities of Sky Observation Club (SOC) of Shri R.L.T. College of Science, Akola. During the programme of 'Eureka' staff of department, were explain experimental information with demonstration of practicals for the students of different school. **Prof. S.R. Jaiswal** conducted online mobile test exam for B.Sc. III year students. Department of physics actively conducted seminars and group discussion for the B.Sc. II and B.Sc. III students. 169 students from B.Sc. II Sem III and 182 students from B.Sc. III Sem V actively participated in **seminar** and as well as 172 students from BSc. II Sem IV and 184 students from B.Sc. III Sem. VI participated in **group discussion** activity. Three teaching staff members continuously participated in research activities. Student of B.Sc. III namely **Yash Vidyasagar, Dipak Lahase, Swapnil Ingle, Tayade** with teacher **Mr. S. R. Jaiswal** demonstrate the Raman Effect effectively with the help of model on the occasion of National Science day on 28th Feb 2019.

● **Achievement of Department of Physics :**

1. **Miss Dipali Khaddakar** secured 2nd number in the merit list of B.Sc. of Sant Gadge Baba Amravati University Amravati
2. **Miss. Priya Wankhede** secured 6th number in the merit list of B.Sc. of Sant Gadge Baba Amravati University Amravati.
3. **Miss. Yoshita Veera** of B.Sc. III participated in the University level "Avishkar Research Festival" 2019, with her project on **low cost dust settler**.
4. **Mr. Nagorao Fulkar** of B.Sc. II participated in the University level "Avishkar Research Festival" 2019, with his project on **Spoil oil control mechanism model**.
5. **Mr. Prashant P. Gedam** clear the 12 week MOOC exam on "**Solid State Physics**" with 77% conductrd by IIT, **Kharagpur** and funded by Minisrty of HRD Govt. of India.

Teaching staff actively participated in research activity as,

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● Research Publication :

Sr. No.	Name of Faculty	Title of Paper	Name of Journal	Status
1.	Mr. P. P. Gedam	One step galvanostatical synthesis and characterization of acid doped PANI thin films.	<i>Research Journey International E-Research Journal Volume 110, Issue-I, pp 31-34 (Feb-2019)</i> ISSN: 2348-7143 Impact factor: 6.261 (UGC Approved Journal)	National
2.	Dr. R.M. Agrawal	Humidity Sensing Properties of BaTiO ₃ doped ZnO Thick Films	<i>Ajanta Volume-VIII, Issue-I, pp 33-38(January 2019)</i> ISSN: 2277-5730 Impact factor: 5.5 (UGC Approved Journal)	National
		Synthesis and Humidity Sensing Investigation of Nanostructured ZnO doped SnO ₂ Thick Films	<i>Research Journey International E-Research Journal Volume 110, Issue-I, pp 25-30 (Feb-2019)</i> ISSN: 2348-7143 Impact factor: 6.261 (UGC Approved Journal)	International
		Water Vapour Sensing Mechanism of PANI doped with ZnO Nanocomposites	<i>Research Journey International E-Research Journal Volume 110, Issue-I, pp 250-253 (Feb-2019)</i> ISSN: 2348-7143 Impact factor: 6.261 (UGC Approved Journal)	International
		Study of AC Electrical Conductivity and Dielectric Properties of Polypyrrole based ZnO Nanocomposites	<i>Research Journey International E-Research Journal Volume 110, Issue-I, pp 254-258 (Feb-2019)</i> ISSN: 2348-7143 Impact factor: 6.261 (UGC Approved Journal)	International
3.	Mr. S. R. Jaiswal	Visible Quantum Cutting in KMgF ₃ Co-doped with Gd ³⁺ and Eu ³⁺ Phosphor		International

● **Paper Presentation :**

● **Mr. Prashant Gedam :**

1. Presented a research paper entitled "One step galvanostatical synthesis and characterization of acid doped PANI thin films." In UGC sponsored National conference on Emerging Trends in science which is organised by Vidya Bharati Mahavidyal Amravati on Feb. 2019.
2. Presented a research paper entitled "Electrochemically synthesis and characterization of polyaniline thin films." In One day National conference on "Nanomaterials and their applications critical" which is organised by Arts commerce and Science college Kille-Dharur Dist. Beed. On 14th Feb. 2019.

● **Dr. R.M. Agrawal :**

1. Presented a research paper entitled "Synthesis and humidity sensing investigation of nanostructured ZnO doped SnO₂ thin films" In UGC sponsored National conference on "Emerging Trends in science" which is organised by Vidya Bharati Mahavidyal Amravati on Feb. 2019.

● **Mr. S.R. Jaiswal :**

1. Presented a research paper entitled "" in International Conference on Luminance and its Applications (ICLA) Jan-2019 at Ravishankar Shukla University, Raipur.

● **Participation in Conference/Seminar/Workshops :**

● **Mr. P.P. Gedam :**

1. Participated in UGC sponsored National conference on Emerging Trends in science which is organised by Vidya Bharati Mahavidyal Amravati on Feb. 2019.
2. Participated in One day National conference on "Nanomaterials and their applications critical" which is organised by Arts commerce and Science college Kille-Dharur Dist. Beed. On 14th Feb. 2019.
3. Participated in One day national level seminar cum workshop on Art of Perfume & soap making (Skill development and self employment) organised by Shri R. L.T. College of Science, Akola on 8th Sept. 2018.
4. Participated in state level seminar on My health my responsibility: complementary to medicine and health care and teachers workshop on Teaching constraints in microbiology and allied sciences organised by Shri R.L.T. College of Science, Akola on 28th Feb 2019.
5. Participated in University level PG students seminar competition on Topology organised by Shri R.L.T. College of science, Akola on 12th March 2019.

● **Dr. R.M. Agrawal :**

1. Participated in UGC sponsored National conference on Emerging Trends in science which is organised by Vidya Bharati Mahavidyal Amravati on Feb. 2019.

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2. Participated in One day national level seminar cum workshop on Art of Perfume & soap making (Skill development and self employment) organised by Shri R.L.T. College of Science, Akola on 8th Sept. 2018.

3. Participated in state level seminar on My health my responsibility: complementary to medicine and health care and teachers workshop on Teaching constrains in microbiology and allied sciences organised by Shri R.L.T. College of Science, Akola on 28th Feb 2019.

4. Participated in University level PG students seminar competition on Topology organised by shri R.L.T. College of science, Akola on 12th March 2019.

5. Participated in UGC sponsored National conference on "Recent Advanced in science and Technology" which is organised by Gopikabai Sitaram Gawande College, Umardhed on 5-6, March, 2019.

● Mr. S.R. Jaiswal :

1.. Participated in One day national level seminar cum workshop on Art of Perfume & soap making (Skill development and self employment) organised by Shri R. L.T. College of Science, Akola on 8th Sept. 2018.

2. Participated in state level seminar on My health my responsibility: complementary to medicine and health care and teachers workshop on Teaching constrains in microbiology and allied sciences organised by Shri R.L.T. College of Science, Akola on 28th Feb 2019.

3. Participated in University level PG students seminar competition on Topology organised by shri R.L.T. College of science, Akola on 12th March 2019.

4. Participated in International conference on "Luminance and its Applications (ICLA)" Jan-2019 at Ravishankar Shukla University, Raipur

● Details of Professional Training/Faculty Development Programme/Courses Specifying Period:

Sr. No.	Name of Faculty	Name of Professional Training/FDP/ Orientation / Refresher Courses	Duration	Venue/Course Undertaken
1.	Mr. P.P. Gedam	MOOC on "Solid State Physics"	12 week	IIT, Kharagpur
2.	Dr. R. M. Agrawal	Train the Trainer Programme.	29 th Oct. 2018 to 3 rd Nov. 2018.	Faculty Development Cell, Sant Gadge Baba Amravati University, Amravati.

● Participation as Resource Person :

Sr. No.	Name of Faculty	Name of the activity	Date	Venue	Level
1.	Mr. P. P. Gedam	Jury member in District Science exhibition.	1 st Jan., 2019	Khirpuri, Akola	District
		Jury member in "World Water Day".	22 nd March, 2019	Shri R.L.T. College of Science, Akola	College level
2.	Dr. R.M. Agrawal	Invited talk on Topic "Time Management" in Four Day Workshop on Skill Development Programme.	22 nd to 25 th March, 2019	Shri R.L.T. College of Science, Akola	University
3.	Mr. S.R. Jaiswal	Invited Talk on Topic "To Know Your Universe" in EUREKA one day workshop for school teachers and student	13 th March 2019	Shri R.L.T. College of Science, Akola	Akola District Science Forum
		Invited talk on "THE COSMOS"	18 th Dec., 2019	Apoti khurd (afatafa).	College level NNS Camp.

Mr. Prashant P. Gedam
Assistant Professor
Department of Physics

DEPARTMENT OF ZOOLOGY

REPORT

DEPARTMENTAL ACTIVITIES :

A) Wall Magazine - BESST (11 Aug. 2018)

Wall Magazine **BESST** (Biological and Environmental Studies with Social Temperament) is started to provide a launch pad for the student's creative urges to blossom naturally. This humble initiative is to set the budding minds free allowing them to roam free in the realm of experience to create a living world in words. Our student authors have put across some amazing pieces of writing in this Wall Magazine. The first issue of Wall Magazine **BESST** was release on 11th August 2018 with the hands of Principal Dr. V.D. Nanoty in presence of IQAC Coordinator Dr. R.L. Rahatgaonkar and Dr. S.M. Nagrale, Head Department of Zoology. Dr. Archana S. Sawarkar worked as Chief Editor and Dr. Sudhir R. Kohchale, Dr. Rashmi Joshi (Sawalkar), Mr. Shailendra V. Madavi worked as Area Editors for Animal Science, Environmental science and Plant Science respectively.

B) Mobile Photography : Exhibition cum Competition (25 Aug. 2018) (Nature and Social Photography)

ZEBRA cell of Zoology Department organized **Mobile Photography Competition & Exhibition** on **Nature and Social Photography** on 25th August 2018 at Zoology Lab. Total 74 students were Exhibited their Mobile photographs collection related to the theme. Three photographs were selected awarded by 1st, 2nd and 3rd prizes.

Mobile Photography Seminar was also organized for the students and participants. Photographer Mr. Sagar Ghadekar and Mr. Kushal Senad delivered explanatory and informative seminar for the students. All faculties were attended the program and all students were take efforts for the success of programm

C) Self Governance Day : Student's Seminar (5th September 2018)

On the occasion 'Teachers Day' on 5th Sept Self Governance Day observed by Department of Zoology. Student's seminar competition organized in the department for B.Sc. Students apart from the regular program of the college. B.ScII and III students participated and delivered seminar on the topics of Zoology included in syllabus. All students and staff of department actively participated in the program. Those who actively delivered their seminar they were selected and felicitated by awards of 1st, 2nd and 3rd prize, Those who participated in seminar were awarded by certificates.

All staff and students actively participated in the **Self Governance Day** program organized by the college and **Students Seminar Competition** conducted by the Department.

D) Guest Lecture on Migration of Fishes (8th September 2018)

A Guest Lecture Dr. Shyamla R. Katke, Head, Department of Zoology, Brijlal Biyani Science College, Amravati was organized on topic "Migration in Fishes" on dated 8th September 2018.

E) World Ozone Day Celebration (16th September 2018)

On the occasion World Ozone Day sampling of Holy Basil Plant collected by the students from

their house and premises and plantation done in the campus of college. To create awareness about Ozone Depletion and to motivated students for creating Oxygen Park in campus such awareness activity carried out for the students. Total 10 saplings planted in the campus.

F) Wild Life Conservation Week Program (1-7 October 2018)

Every year Department of Zoology under ZEBRA cell observe **Wild Life Conservation Week** on **1-7 October Week**. During the week many motivating and students informative programs were conducted by the department. To provide information related nature conservation, wild life conservation and their role in environment, guest lectures and documentary movies presented for the students.

● **Documentary movie show on “Save the Tiger” (1st Oct. 2018)**

On **1st October** inauguration of wild life conservation week was conducted. On this occasion Asst Prof. and Head Dr.S.M.Nagrle guided the students about the wild life conservation. Documentary movie show on **“Save the Tiger”** was arranged for the students B.Sc. students in the College Digital Room. All students enjoyed the Documentary. After the show Dr. S.M. Nagrle, Dr. A.S. Sawarkar and Dr. Rashmi Joshi interacted to the students and guided them about the wild life and their need of conservation for our better future. For the success of Program all the faculties of the department had take their hard efforts.

● **Visit to Nature Interpretation Centre of Akola (3rd Oct. 2018)**

Under the **Wild Life Conservation Week Program visit to Nature Interpretation Centre of Akola** was organized for the B.Sc. students. Under the guidance of Mr. Uday Waze, Founder of Shrushti Vaibhav, NGO, Akola and Faculties of Zoology Department a awareness rally was organized from College campus to the Nature Interpretation Center. Under the lead role of Dr. Kohchale, Dr. Sawarkar and Dr. Joshi students are marched towards the center and under the guidance of Dr. Nagrle students were interact with Mr. Uday Waze and visted the Center. All students actively participated in the events.

G) Biodiversity Calendar (26th January 2019)

To know value of biodiversity and inculcate environmental consciousness among students Biodiversity Calendar-2019 was published on 24th December 2018 with the hands of eminent personalities Hon. Mr. Randhir Savarkar (Member of MLA) and Mr. Viplove Bajoria (Member of MLC). It is an Innovative attempt made by B.Sc.II (Biology) students under supervision of Dr. Archana S. Sawarkar (Dept. of Zoology) and Dr. Anjali A. Sangole (Dept. of Botany). Along with flora and fauna, academic holidays as well as special days concerning environmental issues and importance of biodiversity are mentioned in it. Biodiversity Calendar -2019 is a master piece of efforts taken by students to complete their participatory learning project.

H) Akola City Bird Election (19th Jan. 2019)

Akola city bird election conducted on 19 January 2019 at College Auditorium organized by Akola District Election Officer and Nisarga Katta under the collaboration of Zoology Department of Shri R.L.T. College of Science, Akola. Overall 776 students and staff vote for the selected Bird candidate. Total Five Bird candidate was there for the contest and after counting **Common Egret** was elected as Akola BIRD for next five years.

I) Educational Tour at Kolhapur and Malvan (21th January 2019)

Zoology Department was organised Excursion and Education Tour for B.Sc. Final Year students

at Kolhapur and Malvan during 21th Jan. 2019 to 23rd Jan. 2019. Overall 44 students and 6 Teaching and Non Teaching staff were participated for the Tour. Students visited to the Zoo Museum and different places of Kolhapur. Students also visited to Marine Sanctuary, beaches and other educational centre of the Malvan and returned on 23 Jan. 2019 to Akola.

J) Zoology Aptitude Test (26th February 2019)

To improve the objective and aptitude knowledge of Zoology subject, Department under the guidance and supervision of HOD, Dr. S.M. Nagrale conducted Zoology Aptitude Test for B.Sc.III students. All staff were provides their support for the success of the events. Three students on the basis of higher scoring selected and ranked as 1st, 2nd and 3rd respectively and awarded by certificates.

K) Visit to Anubhuti 2019 : Human organ exhibition (1st March 2019)

Zoology Department was arranged Educational visit for B.Sc. students at Government Medical College Akola for exhibition of ANUBHUTI 2019 : Human Organ exhibition on 1st March 2019. B.Sc.I and II students along with Dr Joshi madam and Dr. Sawarkar madam visited to the exhibition.

L) Wild Life Pencil Art Exhibition (12th March 2019)

Department of zoology organized the wild life pencil art exhibition on 12th of March 2019. The coordinator of the exhibition was Dr. Rashmi Joshi Sawalkar while members of organizing committee were Dr. Archana Sawarkar and Dr. Sudhir kohchale. The inauguration of the exhibition was done by the hands of respected Dr. R.B. Heda, President of the B.G.E. Society, Akola in the gracious presence of executive members of B.G.E. Society and respected Dr Katore, Head P.G. Dept. of Mathematics, SGBAU, Amravati. The sketches of wild life were drawn by the B.Sc. students. It was an effort made by organizing committee to create awareness about biodiversity conservation and developing skill other than studies among the students.

M) Release of Proceedings of Student Project "Birds of Akola" (12th March 2019)

The project entitled "Birds of Akola" is a piece of work carried out by B.Sc. II (Sem. IV) students under supervision of Dr. Archana S. Sawarkar. It is an innovative participatory learning project which included 329 species of birds from 69 families found in Akola region. Information about habit and habitat, general characters, feeding behavior and ecological importance of each bird is given. Proceeding of the project was release with the hands of Dr. R.B. Heda, President, The B.G.E. Society, Akola on 12th March 2019.

N) World Sparrow Day (20th March 2019)

Department of Zoology celebrate World Sparrow Day on 20th March at Zoology department. Students conducted program under the guidance of Dr. S.M. Nagrale. For drinking water to Sparrow, water pots were installed at Botanical Garden in college campus. Students and staff were presents for the events. Water pots were filled with water by the students and staff. Dr. Archana Sawarkar, Dr. Rashmi Joshi Sawalkar madam, Lab. Attendant Shri S.P. Patil and other non-teaching staff also present for the program.

Dr. Sushil M. Nagrale
Head
Department of Zoology

ENVIRONMENTAL CELL

REPORT

The Environmental cell along with students work for various Environment conservation activities and awareness among the students & people.

Environment cell of Shri R.L.T. College of Science, Akola carried out various activities during session 2018-19.

On Vansanvardhan Divas & Krushi Divas i.e. on 1st July 2018 at 08.30 am, all the Members of Environmental Cell, Shri R.L.T. College participated in Morna plantation Campaign which was organised by Vanvibhag and Samajik Vanikaran Akola. The campaign was carried out from 1 to 31 July 2018 Near about 13 crore tree plantation was for targeted throughout various District in Maharashtra Conserve nature for future. The Campaign was Collector of Akola Shri Astik Kumar Pandey. This plantation event Akola was inaugurated by Dr. Ranjeet Patil.

Various Social & Natures clubs Colleges NGO's, Institution work hard for this event & various medicinal as well as Woody and Ornamental plants were planted on the bank of River Morna. All the members of Environmental Cell, Mrs. V.N. Badgujar, Dr. A.S. Sawarkar, Dr. S.R. Kohachale, Dr. Rashmi Joshi, Shri S.V. Madavi were present Mr. Harshal Bais, Mr. Prashant Gulhane, Mr. Nikhil Sharma, Mr. Akhilesh Puranik, Ku. Aarti Kadu, Ku. Shivani Gamgamwar were participated in this event .

Celebration of Wildlife week

On the Occasion of Wildlife week (1-7 Oct. 2018) Holy Basil Club of Botany Dept. & Environment Cell organised "Documentary Film" for students. Prof S.V. Madavi shows Documentary "Kingdom of Plants" by Dr. David Atteninbaurg on 7th Oct. 2018. In all 110 students were present for this event.

Enviormental Calendar

Every year Dr. A.S. Sawarkar (Department of Zoology) & Dr. A.A. Sangole (Department of Botany) released Environmental calendar on the eve of Republic Day. i.e. 26th Jan. 2019 which is useful for Environmental awareness among students & people.

'Bird of Akola' Election 18 Jan. 2019

(15 - 23 Jan. 2019) All the students & members of Environment cell participated in "Bird of Akola" election 2019, which was held at Shri R.L.T. College of Science, Akola.

The students volunteer participated in the compaigning of various Bird by telling their special features, working style and its contribution to Nature's Ecosystem.

This event was organized by Akola Jilha Nivadnuk Adhikari & Nisarg Katta, President, Shri Amolji Sawant. Zebra Cell of Shri R.L.T. College of Science, Akola & Environmental Cell participated in this event.

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The "Gai-Bagla" was elected as 'Bird of Akola'. The students Ku. Aarti Kadu, Ku. Ashwini Bholvanakar, Ku. Shivani Gamgamvar, Shri Ajanakar took efforts for the Campaigning of the nominated Birds.

All the members of Environmental Cell, Mrs. V.N. Badgujar, Dr. S.M. Nagrale, Dr. A.S. Sawarkar Dr. P.T. Agrawal, Dr. P.M. Khadse, Dr. A.A. Sangole, Dr. Rasmi Joshi, Dr. S.R. Kohchale, Dr. K.M. Heda, Shri S.V. Madavi were present. The students Ku. Aarati Kadu, Ku. Ashwini Bholvanakar, Ku. Shivani Gamgamvar, Shri Rhushikesh, Shri Om Kale, Mr. Rishikesh Tiwari took efforts for the success of programme.

Celebration of 'Sparrow Day' : On occasion of 'Sparrow day' ie. 20th March 2019, 'Holy Basil Club' of Botany Department and Environmental Cell students celebrated "Sparrow day". In this project water pots and Bird's Nests were tied on various plants in the Botanical Garden and College Campus. Students were also encouraged to hang this pots & Nests at their home & other social premises. All the members were present among students Miss. Aarti Kadu, Ku. Yashashri Daberao, Ku. Ashwini Vagare, Mr. Himanshu Sunarival, Mr. Shubham Wankhade and all students of Enviornmental Cell work for the event.

Celebration of "Jaljagruti Saptah" : (16 March-22March 2019)

On The occasion of 'Jaljagruti Saptah' Envioimental Cell of Shri R.L.T. College of Science, Akola conducted test for B.Sc.I & B.Sc. II year students on 15th March 2019 which was organised by Vidarbha Patbandhare Vikas Mahamandal Nagpur & Akola Sinchan Mandal Akola.

Similarly of 'Jaljagruti saptah' on 16 March 20019. Environmental cell members and students of our college participated in one day workshop on "Save water & water harvesting methods" held at Shri Khandelwal College of Science, Akola in collaboration with Rotary club of Akola & Akola Sinchan Mandal, Akola.

The Staff members, Mrs V. N. Badgujar, Dr. Kavita Heda, Dr. A.A. Sangole along with the students, Ku. Aarti Kadu, Ku. Gayatri Satarkar, Ku. Dhyaneshwari Palkat, Mr. Om Kale, Mr. Akhilesh Puranik, Mr. Nikhil Sharma were participated.

Similary our students participated in 'Run for water compagion' on 17 March 2019 at Jilhadhikari Karyalaya, organized by Akola Sinchan Mandal Akola & Rotary Club and Akola in Collaboration with Khandelwal College. In all 12 students participated in this Run. The staff members Mrs. V. N. Badgujar & Dr. K.M. Heda also participated in this event.

On the occasion of "Jalgagruti Abhiyan" on 22th March Enviornmental Cell of Shri. R.L.T. College of Science, Akola organized Poster competition on 'Save Water" in collaboration with Botany Department. For UG & PG students the event was inaugurated by our Principal Dr. V.D. Nanoty was Chief Guest, Mr. Ninadji Athavale, Member of Cultural Committee, The BGE Society Akola. Dr. S.M. Nagrale, Dr. Poonam Agrawal were present. Mrs. V.N. Badgujar gives the introductory speech & focus the aim of the programme.

In all 52 participats were participated from UG & PG level. The competition was judge by Dr. Sujata Tadam (HOD, Maths Dept.) and Dr. Gedam (Physics Dept.)

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The winners were awarded with certificate & cash prizes.

UG Level winners :-

1	Ku. Yashashree Daberao	I Prize
2	Ku. Saima Maksood	II Prize
3	Ku. Aarti Kadu	} III Prize
	Ku. Ashawini Vagare	
	Ku. Gayatri Dhobale	

PG Level winners :-

1	Ku. Rashmi Gwaalani	} I Prize M.Sc.Chemistry
	Ku. Shradhha Hategaokar	
2	Mr. Sohail Ali	II Prize M.Sc. Maths

All the staff members of Environmental Cell Dr. A.A. Sawarkar, Dr. Rashmi Joshi, Dr. Kavita Heda, Dr. Rahatgaokar, Prof. D.G. Raipure, Prof. V.D. Wakode took efforts for the programme. The programme was conducted by Dr. P.M. Khasde and Dr. Rashmi Joshi proposed vote of thanks.

Prof. Mrs. Vaishali N. Badgujar
Chairman
Environmental Cell

SKY OBSERVATION CLUB

REPORT

The Sky Observation Club of Shri R.L.T. College of Science, Akola (RLT-SOC) is a college level organization working for amateur Sky lover students and Astronomy interested persons. The main objectives of SOC is that the students and the staff members of the college should know about the subject Astronomy and to create interest in it by actual observing the celestial bodies in the sky and to motivate the students towards research and knowledge in the field of Physics, Astronomy and the deep subject like General Relativity. Interested students from all the classes are made the members of the club by filling up an entry form with undertaking of attending all the sessions and various programs of night vision of celestial atmosphere were arranged for students and staff of the college.

In the session approximate 35 students were enrolled. The regular meetings, guidance classes and various activities are held throughout the session. An 'Astronomical Gallery' was proposed to form in the college to impart the knowledge by exhibiting telescope and other astronomical objects, models and pictures for viewers.

Following are the activities of the SOC throughout the session:

- In the initial sessions we introduced students about the different activities which are conducted by this club Regular. Then in regular sessions we distributed some small astronomical projects to students like Phase of the moon observation, sun rise and set position observation, how to measure diameter of the sun, moon and earth.
- By using **Star Dials and Google Map** how to find current stars position. A program on 'Setting of telescope was arranged under the guidance of Dr. S.M. Nagrale, Prof. R.B. Ghayalkar and Prof. S.R. Jaiswal.
- In the NSS Camp Prof. S.R. Jaiswal delivered a lecture on 'THE COSMOS' on dated 18/12/2018 at gram Apoti khurd (apatapa).
- Eventually we captures astronomical events, in this session on 22 Jan. 2019 Lunar eclipse's / Super Moon Recorded streaming shown to students by Prof. R.B. Ghayalkar .
- In EUREKA 2018-19 one day workshop which was jointly organized by our college with 'Akola district Science Forum' for school students, Prof. S.R. Jaiswal presented a Astronomical Lecture on TO KNOW OUR UNIVERSE' and there after students visited SOC's Astronomical Gallery on dated 13 March 2019.

Prof. R.B. Ghayalkar
Member
Sky Observation Club

ACHIEVEMENTS REPORT

The Students and faculty member of our college always activity participate in various academic as well as extra-curricular activities. A special programme was arranged on Republic day (26th January) to appreciate and felicitate the students and faculty members' achievers who have won laurels for the college on the academic, sports and co-curricular front. We honor the achievements, which have excelled in their endeavors and we are immensely proud of their success. Creates learning and working environments that encourage you to reach your potential and discover your unique purpose. All color coat holders in various Sports, NCC and Research Festival Avishkar were felicitated with cash Prize of Rs. 1,000/- each (Total amount Rs.14,000/-) was sponsored by mother institute, The Berar General Education Society, Akola.

Details of the achievements made over academics session 2018-2019 are as under:

ACHIEVEMENTS OF STUDENTS

Sr. No.	Name of Student	Class	Achievements
1	Mr. Shubham Shriwas	B.Sc.III	Attended Thal Sainik Camp, New Delhi, Gold Medal in All India Service Shooting Competition in TSC Camp, New Delhi
2	Mr. Hitesh Joshi	B.Sc.III	Attended Thal Sainik Camp, New Delhi, Gold Medal in All India Service Shooting Competition in TSC Camp, New Delhi
3	Mr. Vishal Janjal	B.Sc.II	Attended Thal Sainik Camp, New Delhi, Gold Medal in All India Service Shooting Competition in TSC Camp, New Delhi
4	Mr. Sangam Ambhore	B.Sc.II	Attended Thal Sainik Camp, New Delhi, Bronze Medal in All India Service Map Reading Competition in TSC Camp, New Delhi
5	Miss. Kalyani Sangunwedhe	B.Sc.I	Represented Sant Gadge Baba Amravati University in West Zone Inter University Tournament held at Savitribai Phule Pune University, Pune from 29.10.2018 to 01.11.2018. Participated in Open Junior National Handball Tournament held at Himachal Pradesh.

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6	Miss. Shivani Jadhao (Weight Category 57 Kg)	B.Sc.III	Represented Sant Gadge Baba Amravati University in All India Inter University tournament held at Dr. Babasaheb Ambedkar Marathwada University, Aurangbad from 03.11.2018 to 05.11.2018.
7	Miss. Priya Kalalkar (Weight Category 50 Kg)	B.Sc.III	Represented Sant Gadge Baba Amravati University in All India Inter University tournament held at Dr. Babasaheb Ambedkar Marathwada University, Aurangbad from 03.11.2018 to 05.11.2018. Bronze Medal in Inter Collegiate Judo Tournament of S.G.B. Amravati University, Amravati.
8	Miss. Bhagyshri Chaudhari (Weight Category 62 Kg)	B.Sc.I	Represented Sant Gadge Baba Amravati University in All India Inter University tournament held at Dr. Babasaheb Ambedkar Marathwada University, Aurangbad from 03.11.2018 to 05.11.2018. Bronze Medal in Inter Collegiate Judo Tournament of S.G.B. Amravati University, Amravati
9	Miss. Mrunali Wavge	B.Sc.I	Represented Sant Gadge Baba Amravati University in West Zone Inter University Tournament held at Swami Ramanand Teerth Marathwada University, Nanded (Dayanand Arts College, Latur) from 10.11.2018 to 14.11.2018. Participated in Open Junior National Kabaddi Tournament held at Pune CM Chashak Kabaddi Second Place in Akola
10	Mr. Vaibhav Karale Best Sportsmen Award	B.Sc.III	Represented Sant Gadge Baba Amravati University in All India Inter University Tournament held at University of Calicut, (Kerla) from 17.11.2018 to 20.11.2018.
11	Mr. Kshitij Tiwari	B.Sc.I	Representing Sant Gadge Baba Amravati University in All India Inter University Boxing Tournament is scheduled to be held at Janardan Rai Nagar Rajasthan Vidyapeeth, Udaipur (Raj.) from 23.02.2019 to 28.02.2019.
12	Mr. Ruchiket Potey	B.Sc.II	Representing Sant Gadge Baba Amravati University in All India Inter University Power Lifting Tournament is scheduled to be held at University of Calicut,(Kerla) in the month of February / March 2019. Silver Medal in Inter Collegiate Boxing Tournament of S.G.B. Amravati University, Amravati

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13	Ms. Vasundhra Dutonde	B.Sc.III	Selected for State Level University Avishkar from S.G.B. Amravati University, Amravati.
14	Ms. Kanchan Mangtani	M.Sc.II Microbiology	
15	Ms. Pooja Mule	B.Sc.III	Gold Medal in Volleyball Competition in Ek Bharat Shresth Bharat Camp under NCC.
16	Ms. Ashwini Shinde	B.Sc.II	
17	Mr. H.K. Suneriwal	B.Sc.I	Participation in State Level Camp in University of Mumbai, Mumbai under NSS.
18	Mr. Akshay Gulhane	B.Sc.I	
19	Ms. Shrutika Chandak	M.Sc.II Microbiology	All Students are participated in Avishkar Research Convention of Sant Gadge Baba Amravati University, Amravati under various categories.
20	Ms. Krashna Laddha	M.Sc.II Microbiology	
21	Ms. Roshani Kadam	M.Sc.I Microbiology	
22	Ms. Yoshita Veera	B.Sc.III	
23	Mr. Nagorao Fulkar	B.Sc.II	
24	Ms. Apurva Shah	B.Sc.III	
25	Mr. Balraj Khurania	B.Sc.II	
26	Ms. Rutvija Deshmukh	B.Sc.II	
27	Mr. Rohit Khirad	M.Sc.II	
28	Ms. Sayli Jagtap	B.Sc.III	
29	Ms. Sapna Arbe	B.Sc.II	Participate in presentation and demonstration of Physics Experiment at S.G.B. Amravati University, Amravati.
30	Ms. Godavari Raut	B.Sc.III	Silver Medal in Inter Collegiate Wrestling Tournament of S.G.B. Amravati University, Amravati
31	Ms. Karika Gawai	M.Sc.I Maths	Silver Medal in Inter Collegiate Judo Tournament of S.G.B. Amravati University, Amravati
32	Mr. Tushar Gite	B.Sc.III	Bronze Medal in Inter Collegiate Judo Tournament of S.G.B. Amravati University, Amravati
33	Mr. Shubham Mhatarmare	B.Sc.II	Bronze Medal in Inter Collegiate Judo Tournament of S.G.B. Amravati University, Amravati
34	Mr. Abhijeet Sayre	B.Sc.I	Bronze Medal in Inter Collegiate Taekwondo Tournament of S.G.B. Amravati University, Amravati Gold Medal in Ashtedo Akhada National & International Tournament, Goa

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35	Mr. Mahesh Janjal	B.Sc.II	3 rd prize in Vidharbha Level Debate Competition organized by Babuji Deshmukh Vachanalay , Akola 3 rd Prize District Level Elocution Competition Organized by Nehru Yuva Kendra, Akola
36	Ms. Kajal Jawake	B.Sc.III	3 rd prize in Vidharbha Level Debate Competition organized by Babuji Deshmukh Vachanalay , Akola
37	Ms. Srusthi Mate	B.Sc.II	Second Position in Youth Festival 2018 of S.G.B. Amravati University, Amravati
38	Mr. Govind Andhale	B.Sc.II	Participating in S.G.B. Amravati University Level Training NSS Camp.
39	Mr. Aditya Ade	B.Sc.II	
40	Ms. Vijaya Tekade	B.Sc.II	2 nd Prize District Level Elocution Competition Organized by Nehru Yuva Kendra, Akola 3 rd position ranked in Youth Parliament District Level Youth Parliament.
41	Ms. Rutvija Deshmukh	B.Sc.I	3 rd Prize District Level Elocution Competition Organized by Nehru Yuva Kendra, Akola
42	Ms. Ketaki Kshirsagar	B.Sc.III	3 rd Prize District Level Elocution Competition
43	Ms. Vaibhavi Topale	B.Sc.I	1 st position ranked in Youth Parliament District Level Youth Parliament

ACHIEVEMENTS OF FACULTY MEMBERS

S.No.	Name	Designation	Achievements
1	Dr. A.S. Sawarkar	Asst. Prof. Zoology	2 nd Prize for best poster presentation in International Conference on Multifunctional Advance Material held at Nagpur.
2	Prof.Mrs. Vaishali Badgujar	Head of Botany	Paper Presentation in International Conference on Multifunctional Advance Material held at Nagpur.
3	Dr. A.A. Sangole	Asst. Prof. Botany	
4	Dr. P.T. Agrawal	Head of Chemistry Asst. Prof.	1. Paper Presentation in International Conference on Multifunctional Advance Material held at Nagpur. 2. Special Achievement Published Chemistry Practical Book for B.Sc.I.

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			3. Recognized Supervisor of Sant Gadge Baba Amravati University, Amravati for Ph.D. in the subject of Chemistry.
5	Dr. P.P. Deohate	Asst. Prof. Chemistry	<ol style="list-style-type: none"> 1. Published 6 research paper in reputed journals 2. Appointed as Chief Editor of Amravati University Chemistry Association Newsletter 3. Ideal Teacher Award from State Level Congress Teacher Cell. 4. Received award for excellence in research by 3rd South Asian Society.
6	Dr. P.R. Kawade	Asst. Prof. Chemistry	<ol style="list-style-type: none"> 1. Poster Presentation in International Conference of Indian Science Congress held at Punjab University, Punjab. 2. Recognized Supervisor of Sant Gadge Baba Amravati University, Amravati for Ph.D. in the Subject of Chemistry.
7	Dr. K.M. Heda	Asst. Prof. Chemistry	<ol style="list-style-type: none"> 1. Paper Presentation in International Conference on Multifunctional Advance Material held at Nagpur 2. Special Achievement Published Chemistry Practical Book for B.Sc.I. 3. Publish research paper in reputed journals.
8	Dr. V.D. Deotale	Asst. Prof. Chemistry	<ol style="list-style-type: none"> 1. Poster Presentation in International Conference of Indian Science Congress held at Punjab University, Punjab 2. Paper Presentation in International Conference on Multifunctional Advance Material held at Nagpur
9	Dr. H.S. Malpani	Asst. Prof. Microbiology	Poster Presentation in International Conference of Indian Science Congress held at Punjab University, Punjab
10	Prof. P.P.Gedam	Asst. Prof. Physics	<ol style="list-style-type: none"> 1. Jury member of District Science Exhibition held at Khirpuri 1st January 2019. 2. 12 week online course of IIT on Solid State Physics.

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11	Prof. S.R. Jaiswal	Asst. Prof. Physics	Poster Presentation in International Conference on Luminance and its Application held at NIT, Raipur
12	Dr. Rashmi Sawalkar	Asst. Prof. Zoology	3 rd Prize for paper presentation in National Conference Recent Trends in Life Sciences for Sustainable development held at S.G.B. Amravati University, Amravati
13	Prof. Ms. S.N. Gawande	Asst. Prof. Microbiology	Poster Presentation in National Conference in Recent Trends in Life Sciences for Sustainable development held at Sant Gadge Baba Amravati University, Amravati
14	Dr. Sudhir Kohchale	Asst. Prof. Zoology	1. Qualify SET Examination in May 2018 in the subject of Zoology 2. Work as Trainer at S.G.B. Amravati University for Avhan 2018 3. Invited in HRDC – UGC ASC S.G.B. Amravati University, Amravati as Resource Person in Disaster Management.
15	Dr. P.M. Khadse	Asst. Prof. Botany	Ph.D. Degree Awarded by S.G.B. Amravati University, Amravati.
16	Dr. A.G. Sarap	Asst. Prof. Chemistry	Special Achievement Published Chemistry Practical Book for B.Sc.I.
17	Dr. Rajesh D. Chandrawanshi	Director of Sports & Physical Ed.	Recognized Supervisor of Sant Gadge Baba Amravati University, Amravati for Ph.D. in the Subject of Physical Education.
18	Mr. S.B. Khobragade	C.H.B. in Mathematics	Ph.D. Degree Awarded by S.G.B. Amravati University, Amravati.
19	Mr. Syed Haroon	Lecturer	Appointed as Divisional Coordinator for IT.
20	Mr. D.R. Sakhare	PG student	Qualify SET Examination in January 2018 in the subject of Mathematics.
21	Mr. Shailesh Alone	Lab Attendant	Vice President of State Level Rural Press Media.

Dr. Rajesh D. Chandrawanshi
Chairman
Achievement Committee

AVISHKAR - RESEARCH FESTIVAL

REPORT

List of the students selected for University Level AVISHKAR-2018 Competition

Level	UG	Category	Humanities, Language and Fine Arts	Rank
Sr.No	Name of Students	Class/Batch	Topic	
1	Rutvija Deshmukh	B.Sc.I	Effect of Kirtan on Human Behaviour	3rd

Level	UG	Category	Commerce, Management and Law	Rank
Sr.No	Name of Students	Class/Batch	Topic	
2	Yoshita Veera	B.Sc.III	Dust settler: An Economic Homemade Instrument	1st

Level	UG	Category	Agriculture and Animal Husbandry	Rank
Sr.No	Name of Students	Class/Batch	Topic	
3	Balraj Khuraniya	B.Sc.III	Assessment of Ground Water Quality	1st

Level	UG	Category	Medicine and Pharmacy	Rank
Sr.No	Name of Students	Class/Batch	Topic	
4	Apurva Shah	B.Sc.III	Herbal Solution Remedies for Dandruff	2nd

Level	UG	Category	Pure Science	Rank
Sr.No	Name of Students	Class/Batch	Topic	
5	Vasundhara Dutonde	B.Sc.III	Biodiesel Preparation from Virgin	1st

Level	UG	Category	Engineering and Technology	Rank
Sr.No	Name of Students	Class/Batch	Topic	
1	Mr. Akhilesh Puranik	B.Sc.I	Handmade Paper	
2	Mr. Nagorao S. Fulkare	B.Sc.II	Oil Spoilage Model	

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List of the students selected for University Level AVISHKAR-2018 Competition

Level	PG	Category	Humanities, Language and Fine Arts	Rank
Sr.No	Name of Students	Class/Batch	Topic	
1	Rohit P. Khirade	M.Sc.II	Rangoli	2nd

Level	PG	Category	Commerce, Management and Law	Rank
Sr.No	Name of Students	Class/Batch	Topic	
2	Kanchan Mangtani	M.Sc.II	Waste Management	1st

Level	PG	Category	Agriculture and Animal Husbandry	Rank
Sr.No	Name of Students	Class/Batch	Topic	
3	Krushna R. Laddha	M.Sc.II	Effect of Spraying Fermented Extract	1st
4	Shrutika S. Chandak	M.Sc.II	Production and optimization of Cyonobacterial biofertilizer for saline belt of Vidarbha region	3rd

Level	PG	Category	Medicine and Pharmacy	Rank
Sr.No	Name of Students	Class/Batch	Topic	
5	Roshni Kadam	M.Sc.II	Study of antimicrobial contain in Pumpkin	3rd

List of the students selected for State Level AVISHKAR-2018 Competition

Level	PG	Category	Commerce, Management and Law
Sr.No	Name of Students	Class/Batch	Topic
1	Kanchan Mangtani	M.Sc.II	Waste Management

Level	UG	Category	Pure Science
Sr.No	Name of Students	Class/Batch	Topic
2	Vasundhara Dutonde	B.Sc.III	Biodiesel Preparation from Virgin

Dr. Sushil M. Nagrale
Chairman
AVISHKAR Committee

NATIONAL CADET CORPS

REPORT

The strength of NCC Cadets in this year is 50 cadets.

Strength of Cadets in year 2018-19

Year	SD	SW	NCC Cdt
I	14	09	23
II	12	02	14
III	06	07	13
Total	32	18	50

It is pleased to highlight the activities run by NCC Unit.

- The conference was organized in presence of AO Rohit Shah on smooth conduction of International Yoga Day on 21st June.
- 27 NCC Cadets participated and performed Yoga on the occasion of **International Yoga Day** which is held every year on 21st June at convocation hall of Dr. PDKV, Akola.
- 12 NCC Boys Cadets & 08 NCC Girls Cadets are participated in the CATC Camp at PDKV on 20th June 2018 to 29 June 2018.
- Enrollement of NCC cadets took place on 30th July 2018. There are total 09 girl cadets and 14 boy cadets was enrolled.
- 07 NCC cadets are selected for TSC Camp at Amravati.
- 11 Cadets are participated in TSC-ATC (Inter Batalion completion camp) Camp which held at VMV Campus, Amravati from 08th July 2018 to 18th July 2018.
- 25 NCC cadets with care taker Dr. R M. Agrawal celebrated **Kranti Din** in college campus in the presence of key address given by Hon'ble Principal Dr. V.D. Nanoty on 9th Aug. 2018.
- 50 Cadets participated in **Independence day** Flag hosting program at Shri RLT College on 15th Aug. 2018.
- 27 cadets participated in **Tree plantation** programme in college on 15th Aug. 2018.
- 08 Cadets are participated in CATC No.111 Camp which held at VMV Campus, Amravati from 27th Aug. 2018 to 05th Sept. 2018.

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- 02 Cadets participated in CATC No.112 Camp which held at VMV Campus, Amravati from 06th Sept. 2018 to 15th Sept. 2018.
- Four cadet **Shubham Shriwas, Vishal Janjal, Hitesh Joshi** and **Sangam Ambore** is selected for TSC Camp and got **Colour Coat** which was held 17th Sept. 2018 to 28th Sept. 2018 at New Delhi.
- **Shubham Shriwas** bagged **Gold medal** in inter grouping service shooting competition in CATC-TSC camp held at Amravati (**Maharashtra level**).
- **Sangam Ambhore** bagged **Gold Medal** in Map reading competition in CATC-TSC camp held at Amravati (**Maharashtra level**).
- **Shubham Shriwas, Vishal Janjal, Hitesh Joshi** has begged **Gold medal** in Inter director service shooting competition in TSC camp held at New Delhi (**National Level**).
- **Sangam Ambhore** bagged **Bronze Medal** in Map reading competition in TSC camp held at New Delhi (**National level**).
- 32 cadets are take part in “**Shwachta Abhiyan**” programme in which cadets with Care Taker clean the college campus and Bus stand (Civil Line) and organised **rally on Shwachta Abhiyan** on 02nd Oct. 2018.
- Felicitation of **Shubham Shriwas, Vishal Janjal, Hitesh Joshi** and **Sangam Ambore (Colour Coat Holder)** was organised by the college in presence of Principal Dr. V.D. Nanoty Sir, NCC care taker Dr. R.M. Agrawal and Dr. U.K. Bhalekar, Prof. Chaudhri on 3rd Oct. 2018.
- The 16 Cadet of Shri R.L.T. College of Science Akola participated in **HIV/Aids Day Rally** which is organized by Government Medical College Akola on **1st Dec. 2018**.
- The 25 Cadet were participated in **Hot Air Balloon camp** organised by Indian Army at PDKV, Akola on dated 2nd Dec 2018.
- The 07 Cadet were participated in **Blood Donation camp** on the occasion of NCC DAY organised by 11 MAH BN NCC, Akola on dated **2nd Dec 2018**.
- The 37 cadet with C/To Dr. R.M. Agrawal were participated in **Guest Lecture** arranged on the topic “**Swachta The Way Ahead**” given by **Dr. Sudhir Kochale** in RLT College of Science Akola, on dated 13.12.2018.
- The 03 Cadet were participated in National Integration Camp (NIC) camp at Aurangabad from 17 Dec. 2018 to 28 Dec. 2018.
- On the occasion of Death Anniversary of Hon'ble former Principal. M.G. Joshi sir NCC Unit of this college organise and participated in **Blood donation Camp** in college auditorium in which 12 NCC Cadets donate blood on 24th Dec. 2018.
- 02 SW Cadet **Ashwini Shinde** and **Pooja Mulley** won **Gold Medal** in Volleyball competition National Integration Camp (NIC) camp at Aurangabad.

- 02 SD cadet participated in CATC camp which is held at Yavatmal from 3 Dec. 2018 to 12 Dec. 2018.
- 04 SD Cadet participated in Basic leadership camp (BLC) which is held at VMV campus Amravati.
- 50 Cadets participated in **Republic day** Flag hosting program at Shri R.L.T. College on 26th Jan. 2019.
- 16 Cadets appeared for B-cert exam-2019.
- 09 Cadets appeared for C-cert exam-2019.
- Organised Guest Lecture i.e. Address to the nearly 26 NCC cadet by the **Capt. Anshu Jagmohan** at R.L.T. College of Science, Akola on dated 25 Feb. 2019.

Dr. Rohitkumar M. Agrawal
NCC Care Taker

राष्ट्रीय सेवा योजना

नियमित कार्यक्रम

अहवाल

- **राष्ट्रीय सेवा योजना सल्लागार समिती स्थापना** : भारत सरकार युवा कार्य व खेळ मंत्रालय दिल्ली रा.से.यो. संहिता २००६ भाग -४ प्रकरण -५ मुद्दा क्रमांक ४,४,१,४,२,४,३ अन्वये रा.से.यो. विद्यापीठ कक्षाद्वारे निश्चित झालेले धोरणात्मक निर्णय कृती कार्यक्रम आराखडा आखणे तसेच नियोजन संबंधित सत्र २०१८-१९ करिता राष्ट्रीय सेवा योजना सल्लागार समितीचे गठन दि. २७ जून २०१८ (बुधवार) रोजी महाविद्यालयात रा.से.यो. अध्यक्ष महाविद्यालयाचे प्राचार्य डॉ. विजय डी. नानोटी यांच्या मार्गदर्शनात करण्यात आले. या बैठकीत नियमित कार्यक्रम व विशेष शिबीर या अंतर्गत घ्यावयाचे कार्यक्रम या विषयावर चर्चा करण्यात आली.
- **रा.से.यो. तर्फे योग दिन साजरा** : दि. २१-६-१८ स्थानिक श्री रा.ल.तो. विज्ञान महाविद्यालय अकोला येथील रा.से.यो. पथकाद्वारे २१ जून २०१८ रोजी "आंतरराष्ट्रीय योग दिन" साजरा करण्यात आला.
- **१३ कोटी वृक्ष लागवड उपक्रम** : दि. १ जुलै २०१८ (रविवार) रोजी महाराष्ट्र शासनाच्या धोरणानुसार संपुर्ण राज्यात १३ कोटी वृक्ष लागवड जुलै महिन्यामध्ये करण्यात आले. यादिवशी मोर्णा नदी काठी माननीय पालकमंत्र्यांच्या हस्ते वृक्ष लागवड करण्यात आले. यावेळी अकोल्याचे जिल्हाधिकारी मा.श्री. अस्तिक कुमार पाण्डेय यांच्या मार्गदर्शनाखाली वनविभाग व सामाजिक वनीकरण विभाग अकोला ह्यांच्या वतीने मोर्णा नदीच्या काठी वृक्ष लागवडीचा उपक्रम राबविण्यात आला. या कार्यक्रमात प्राचार्य डॉ. व्ही.डी. नानोटी, रा.से.यो. चे क्षेत्रीय समन्वयक प्रा.डॉ. सुधीर कोहचाळे, कार्यक्रम अधिकारी प्रा.डॉ. समाधान मुंडे, प्रा.डॉ. रश्मी जोशी (सावलकर), रा.से.यो. चे स्वयंसेवक आणि महाविद्यालयीन शिक्षकवृंद या वृक्ष लागवड महोत्सवात मोठ्या संख्येने सहभागी झाले होते.
- **एक दिवसीय महिला सक्षमीकरण कार्यशाळा** : दि. २० जुलै २०१८ रोजी "सायबर क्राईम एंड वूमन सेफ्टी" ह्या कार्यशाळेचे आयोजन रासेयो व अकोला जिल्हा पोलीस दल-दामिनी २ पथकाच्या संयुक्त विद्यमाने करण्यात आले होते.
- **वृक्ष रक्षाबंधन सोहळा** : दि. २७-८-२०१८ रोजी महाविद्यालयातील राष्ट्रीय सेवा योजनाच्या स्वयंसेवकांनी वृक्ष रक्षाबंधन म्हणजे राखी बांधण्याचा कार्यक्रम महाविद्यालयाच्या परिसरात आयोजित करण्यात आला होता. या कार्यक्रमाकरिता राष्ट्रीय सेवा योजनाच्या स्वयंसेवकांनी मोठ्या आकाराच्या सुंदर राख्या तयार करून महाविद्यालय परिसरातील सर्व झाडांना राख्या बांधल्या.
- **स्वच्छ भारत अभियान पंधरवाडा** : विभागीय संचालक, युवा कल्याण व क्रीडा विभाग, भारत सरकार नवी दिल्ली यांच्या पत्रानुसार महाविद्यालयातील रा.से.यो. च्या स्वयंसेवकांनी 'स्वच्छ भारत अभियान पंधरवाडा' दि. १ ते १५ ऑगस्ट २०१८ या दरम्यान महाविद्यालयात विविध कार्यक्रमाचे आयोजन करण्यात आले. यामध्ये "स्वच्छता शपथ; महाविद्यालयीन परिसर स्वच्छता, वर्ग खोल्या, प्रयोगशाळा, ग्रंथालय, बाथरूम, महाविद्यालयातील सभागृह, महाविद्यालयाच्या समोरील रस्ता व इतर परिसर ची स्वच्छता करण्यात आली; "स्वच्छ भारत अभियान पंधरवाडा; स्वच्छता पाळा रोगराई टाळा अश्या विषयावर मार्गदर्शने; बसस्थानकासमोरील नजीकच्या गांधी जवाहर उद्यानामधील

राष्ट्रपिता महात्मा गांधी व पंडित जवाहरलाल नेहरू या महापुरुषांच्या पुतळ्यावर पाणी मारून स्वच्छता करण्यात आली. तसेच उद्यानाच्या सर्व परिसराची स्वच्छता करण्यात आली. दि. १५-८--२०१८ (बुधवार) रोजी स्वतंत्र दिना निमित्त प्राचार्य डॉ. व्ही.डी. नानोटी यांच्या हस्ते ध्वजारोहन करण्यात आले. "स्वच्छ भारत, स्वस्थ भारत" या वाक्याचा उल्लेख करून रा.से.यो. च्या स्वयंसेवकांनी दि. १५-८-२०१८ ला "स्वच्छ भारत अभियान पंधरवाडा" संपन्न करण्यात आला.

- **शिक्षक दिन** : दि. ५-९-२०१८ रोजी भारताचे महान सुपुत्र डॉ. सर्वपल्ली राधाकृष्णन यांचा जन्मदिनाच्या निमित्ताने शिक्षक दिन साजरा करण्यात आला.
- **रा.से.यो. वर्धापन दिन** : दि. २४-९-२०१८ रोजी वर्धापन दिन साजरा करण्यात आला या दिना निमित्त स्वच्छता हीच सेवा अभियान राबविण्यात आले, यामध्ये प्रामुख्याने स्वच्छता विषयक माहितीपर पथनाट्य, रॅलीचे आयोजन, निबंध स्पर्धा, रांगोळी स्पर्धा व चित्रकला स्पर्धा घेण्यात आल्या.
- **गांधी जयंती व लाल बहादूर शास्त्री जयंती** : महात्मा गांधी व लाल बहादूर शास्त्री जयंतीनिमित्त २ ऑक्टोबर २०१८ ला रा.से.यो. च्या वतीने स्वच्छता रॅलीचे आयोजन व ठिकठिकाणी स्वच्छता पथ नाट्याचे सादरीकरण करण्यात आले.
- **संविधान सप्ताह** : दि. २४ नोव्हेंबर ते २ डिसेंबर २०१८ या दरम्यान ला रा.से.यो. पथकाद्वारे संविधान सप्ताह साजरा करण्यात आला. दि. २४ नोव्हेंबर ला संविधान वाचन करण्यात आले. संविधान चा मान राखण्या बद्दल शपथ देण्यात आली. वक्तृत्व स्पर्धा व निबंध स्पर्धा घेण्यात आल्या. विद्यार्थिनींनी सुद्धा आपल्या वक्तृत्वात भारतीय घटनेबाबत सखोल माहिती दिली.
- **जागतिक एड्स दिवस - रेड रिबन क्लब ची स्थापना** : १ डिसेंबर २०१८ जागतिक एड्स दिवसचे औचित्य साधून 'रेड रिबन क्लब' ची स्थापना व गठन करण्यात आले. कार्यक्रमाचे अध्यक्ष प्राचार्य डॉ. व्ही.डी. नानोटी यांनी विद्यार्थ्यांना समाजात एड्स बद्दल जनजागृती करावयास उद्बोधित केले.
- **D.M.C. ची कार्यशाळा** : दि. १४-१२-२०१८ रोजी संत गाडगेबाबा विद्यापीठ अमरावतीमध्ये DMC ची एक दिवसीय कार्यशाळा घेण्यात आली. रा.से.यो. चे क्षेत्रीय समन्वयक डॉ. सुधीर कोहचाले ह्यांनी रेसोर्स पर्सन म्हणून कार्य केले. ८ ते १० वेगवेगळ्या ठिकाणी DMC च्या कार्यशाळा घेण्यात आल्या. श्री. रा.ल.तो. विज्ञान महाविद्यालयातील हे पथक आहे विद्यापीठातील हे सर्वात पहिले गठीत केलेले एकमात्र पथक आहे.
- **रा.से.यो. चे विशेष शिबीर** : रा.से.यो. पथकाचे विशेष शिबीर १६ ते २३ डिसेंबर २०१८, ग्राम आपोती (खुर्द) येथे घेण्यात आले. शिबिरात १०० स्वयंसेवक होते त्यापैकी ५७ मुली व ४३ मुलांनी सहभाग घेतला. गावकऱ्यांमध्ये स्वच्छते विषयी आणि पाणी संवर्धन करण्याबाबत जनजागृती करण्यात आली. महिला मेळाव्यात कार्यक्रम अधिकारी डॉ. रश्मी जोशी सावलकर ह्यांनी गावातील मुलींना व महिलांना अगरबत्ती बनविण्याचे व कागदापासून पिशव्या बनविण्याची कार्यशाळा घेतली जेणेकरून घरगुती उद्योग महिलांना मिळावे. रा.से.यो. पथकाने वनराई बंधारा बांधून व गाव स्वच्छता करीत गाव फेरी काढून श्रमदान केले.
- **रक्तदान शिबीर** : दिनांक २४-१२-२०१८ ला रा.से.यो. पथकाद्वारे श्री रा.ल.तो. विज्ञान महाविद्यालयात माननीय प्राचार्य श्री म.गो. जोशी ह्यांच्या स्मृति प्रित्यर्थ रक्तदान शिबिराचे आयोजन दरवर्षी करण्यात येते. ३७ रक्तदात्यांनी ह्या शिबिरात रक्तदान केले.

- **मोर्णा महोत्सव** : जिल्हाधिकारी कार्यालय अकोलाच्या वतीने २९-१२-२०१८ ला मोर्णा महोत्सवाचे आयोजन करण्यात आले होते. रोसेयोच्या विद्यार्थीनीच्या व शिक्षकांनी, कार्यक्रम अधिकारी डॉ. रश्मी जोशी ह्यांच्या मार्गदर्शनाखाली मोर्णा महोत्सवात गीत गायन व नृत्य द्वारा आपला सहभाग नोंदविला.
- **रस्ता सुरक्षा अभियान** : दि. ८-१-२०१९ रोजी महाविद्यालयात अकोला शहर वाहतूक शाखेचे श्री. विलास पाटील ह्यांनी विद्यार्थ्यांना मार्गदर्शन केले. अकोला जिल्हा पोलीस अधीक्षक श्री. एम. कलासागर ह्यांच्या संकल्पनेतून हा अभियान राबविण्यात आला. रस्त्यावर सुरक्षा कशी ठेवावी, अपघात झाल्यास काय करावे याबद्दलचे धडे दिले.
- **जिल्हा विशेष शिबिर** : श्री रा.ल.तो. विज्ञान महाविद्यालयाच्या तीन विद्यार्थिनी कु. प्रगती नवलकर, कु. मनिषाकुमारी गुडधे आणि कु. स्नेहल गावंडे ह्या १८ ते २५ जनवरी २०१९ या दरम्यान आयोजित विद्यापीठस्तरीय जिल्हानिहाय शिबिरात ग्राम सोनाला येथे सहभागी झाल्या.
- **अकोला पक्षी निवडणूक** : दि. १९-१-२०१९ रोजी अकोला निवडणूक कार्यालय व निसर्गकट्टा ह्यांच्या संयुक्त विद्यमाने अकोल्याचा पक्षी निवडण्यासाठी एक आगळीवेगळी "पक्षी निवडणूक" शहराच्या प्रत्येक शाळेत व महाविद्यालयात घेण्यात आली. श्री रा.ल.तो. महाविद्यालयात विक्रमी मतदान झाले. रिंगणात पांच पक्षी उमेदवार होते, प्रत्येक उमेदवाराचे प्रचार करण्याकरिता पांच विद्यार्थ्यांची नेमणूक केली गेली. गाय बगळा हा पक्षी निवडून आला. श्री रा.ल.तो. विज्ञान महाविद्यालयाची विद्यार्थिनी कु. आरती कडू हिला उत्कृष्ट प्रचार केल्याबद्दल अकोला जिल्हाधिकारी कार्यालयात गौरविण्यात आले.
- **राष्ट्रीय मतदान दिन** : दि. २५-१-२०१९ रोजी जिल्हाधिकारी अकोलाच्या वतीने राष्ट्रीय मतदान दिनानिमित्त रॅली काढण्यात आली. ह्या रॅलीमध्ये श्री रा.ल.तो. महाविद्यालयाचे रा.से.यो. चमूनी सहभाग नोंदविला व नारे लावत आणि पोस्टर्स च्या माध्यमांनी जनजागृती केली.
- **संत गाडगेबाबांच्या दुर्मिळ छायाचित्रांची प्रदर्शनी** : दि. ४-२-२०१९ रोजी संत गाडगे बाबा अमरावती विद्यापीठाच्या अध्यासन केंद्राच्या वतीने श्री रा.ल.तो. महाविद्यालयात गाडगे बाबांच्या दुर्मिळ छायाचित्रांच्या प्रदर्शनीचे आयोजन करण्यात आले होते. ह्या प्रदर्शनीचे उद्घाटक म्हणून माननीय श्री. दिलीपजी काळे, रा.से.यो. सल्लागार समिती सदस्य तसेच दिरेक्टर "गाडगे बाबा अध्यासन केंद्र" अमरावती विद्यापीठ हे होते.
- **रस्ता सुरक्षा सप्ताह २०१९** : रस्ता सुरक्षा सप्ताहनिमित्त पथनाट्याचे सादरीकरण ८ फेब्रुवारी २०१९ रोजी स्थानिक श्री रा.ल.तो. विज्ञान महाविद्यालय अकोला चे रा.से.यो. पथक व जिल्हा उप प्रादेशिक वाहन कार्यालय यांचे संयुक्त विद्यमाने रस्ता सुरक्षा अभियानाचे निमित्त जनजागृती अभियान राबविण्यात आले. या अभियाना अंतर्गत रा.से.यो. स्वयंसेवकांद्वारे पथनाट्याचे आयोजन व सादरीकरण शहरातील विविध ठिकाणी प्रामुख्याने रेल्वे स्थानक, बस स्थानक, सिटी कोतवाली, गांधी रोड तसेच महाविद्यालयात सादरीकरण करण्यात आले. रस्ता सुरक्षा सप्ताहाच्या शेवटच्या दिवशी दि. १२-२-२०१९ रोजी रांगोळी स्पर्धा आणि घोषवाक्य स्पर्धेचे आयोजन रा.से.यो. च्या महिला कार्यक्रम अधिकारी डॉ. रश्मी जोशी सावलकर ह्यांच्या मार्गदर्शनाखाली करण्यात आले व दोन्ही स्पर्धाकॉपेकी १ले, २रे व ३ रे पारितोषिक देण्यात आले.
- **रा.से.यो. व DMC सहल** : दिनांक २१-२-२०१९ ला रा.से.यो. व DMC च्या विद्यार्थ्यांची सहल पातुर तलाव, वन्य प्राण्यांचे इंटरप्रिटेशन केंद्राला नेण्यात आली. ह्या सहली दरम्यान वन्यजीव संरक्षण आणि विविधता बद्दल धडे देण्यात आले.

- **मतदान जनजागृती शपथ** : श्री संत गाडगे बाबा विद्यापीठ रा.से.यो. पथकाकडून मिळालेल्या पत्रानुसार ज्या विद्यार्थ्यांची मतदार यादीत नव्याने नोंद झाली आहे अश्या विद्यार्थ्यांना दि. ०३-०३-२०१९ ला मतदान जनजागृती पर शपथ देण्यात आली, कि ते स्वतः मतदान करतील व इतर नागरिकांना सुद्धा मतदानाचा हक्काबद्दल माहिती देतील व मतदान करून आपले भारतीय नागरिक होण्याचे कर्तव्य पूर्ण करतील. माननीय प्राचार्य डॉ. व्ही.डी. नानोटी ह्यांनी विद्यार्थ्यांकडून ही शपथ घेतली.
- **दोन दिवसीय महिला सक्षमीकरण कार्यशाळेत सहभाग** : दि. २५ व २६ मार्च २०१९ ला अमरावती विद्यापीठाच्या रा.से.यो. कार्यालय द्वारे दोन दिवसीय महिला सक्षमीकरण कार्यशाळा घेण्यात आली. ह्या कार्यशाळेत श्री रा.ल.तो. विज्ञान महाविद्यालयातील रा.से.यो. च्या दोन विद्यार्थीनी कु. शिवानी गंगमवार व कु. अंकिता गजभिये ह्यांनी आपला सहभाग नोंदविला. महिलांनी कसे सक्षम व्हावे व प्रत्येक कार्यात त्यांचा सहभाग व्हावा त्याकरिता कार्यशाळेत त्यांना मनोबल वाढविण्याकरिता धडे देण्यात आले.
- **रा.से.यो. समारोप** : दि. ३१-३-२०१९ रोजी रा.से.यो. समारोपीय कार्यक्रमाचे आयोजन करण्यात आले. कार्यक्रम अधिकारी यांनी विस्तृत अहवाल वाचन केले. रा.से.यो. समारोपीय कार्यक्रम महाविद्यालयाचे प्राचार्य डॉ. नानोटी सर यांच्या अध्यक्षतेत पार पडला.

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राष्ट्रीय सेवा योजना

विशेष शिबीर - ग्राम आपोती (खुर्द)

शिबीर अहवाल

(दि. १६ डिसेंबर २०१८ ते २३ डिसेंबर २०१८)

दि. १६-१२-२०१८ (रविवार) :

ग्राम आपोती (खु.) येथे दिनांक १६-१२-२०१८ रोजी विद्यार्थ्यांचे आगमन, यानंतर विद्यार्थ्यांची नोंदणी व पूर्वतयारी करण्यात आली. सर्वप्रथम कार्यक्रम परिसर कर्मयोगी बाबासाहेब आपोतीकर विद्यालय येथे स्वच्छता करण्यात आली. तसेच गावकऱ्यांसोबत चर्चा व प्रकल्पांची पाहणी करण्यात आली. "स्वच्छ भारत स्वस्थ भारत" अभियान अंतर्गत ग्राम आपोती (खु.) येथे राबविण्यात येणाऱ्या उपक्रमाची व कार्यक्रमाची माहिती कार्यक्रम अधिकाऱ्यांनी गावकऱ्यांना दिली.

दि. १७-१२-२०१८ (सोमवार) :

ग्राम आपोती (कु.) येथे श्री रा.ल.तो. विज्ञान महाविद्यालयाच्या राष्ट्रीय सेवा योजनेच्या शिबिराचे उद्घाटन १७ डिसेंबर २०१८ रोजी पार पडले. या कार्यक्रमाच्या उद्घाटन प्रसंगी अध्यक्ष म्हणून मा.डॉ. आर.बी. हेडा (दंतशल्य चिकित्सक तथा अध्यक्ष दि.बी.जी.ई. सोसायटी, अकोला) हे उपस्थित होते व उद्घाटक म्हणून क.शि.प्र. संस्था आपातापा चे अध्यक्ष श्री. दामोदर कडू उपस्थित होते. मा.अॅड. श्री. मोतीसिंहजी मोहता (मानद सचिव दि.बी.जी.ई. सोसायटी, अकोला) व मा.डॉ. व्ही.डी. नानोटी (प्राचार्य श्री रा.ल.तो. विज्ञान महाविद्यालय, अकोला हे प्रमुख पाहुणे म्हणून कार्यक्रमाचे उद्घाटनास लाभले होते. कार्यक्रमाची शोभा वाढविण्यास इतर मान्यवर सुद्धा उपस्थित होते. सौ. लक्ष्मीताई संजय घुसे (सरपंच), डॉ. उमेशराव वि. बोपटे (उपसरपंच), श्री. कैलासराव वि. अपोतीकर (पोलीस पाटील), डॉ. शांतारामजी बुटे (संस्थापक क.शि.प्र. संस्था आपातापा) हे सुद्धा उपस्थित होते.

पहिल्या दिवसाच्या संध्याकाळच्या सत्रात ७.०० वा. आचार्य ह.भ.प. श्री ज्ञानेश्वरजी महाराज तायडे यांचे "संस्कारमय आध्यात्मिक ज्ञान" या विषयावर उद्बोधन शिबिरार्थींना लाभले होते. या कार्यक्रमात गावातील मंडळी आणि रासेयो शिबिरार्थी मोठ्या संख्येने उपस्थित होते.

दिनांक १८-१२-२०१८ (मंगळवार) :

तिसऱ्या दिवसाच्या सकाळच्या सत्रात प्रार्थना, स्फूर्तीगीते व रॅलीचे आयोजन करण्यात आले आणि त्याचबरोबर श्रमदानाकरिता गावातील नाल्यावर जागा पाहून वनराई बंधारा बांधण्याचे कामाला सुरुवात करण्यात आली. या शिबिरात श्री रा.ल.तो. विज्ञान महाविद्यालयाच्या आपती व्यवस्थापन कक्षाचे समन्वयक व रासेयोचे क्षेत्रीय समन्वयक डॉ. सुधीर कोह्याळे यांनी आपल्या प्रशिक्षित स्वयंसेवकांसोबत प्रात्यक्षिके दाखवत आपतीला न डगमगता कशाप्रकारे सामोरे जाता येऊ शकते याबद्दल मार्गदर्शन केले.

दुपारच्या बौद्धिक सत्रात श्री रा.ल.तो. विज्ञान महाविद्यालयाचे प्रा.डॉ. हरीश मालपाणी (सूक्ष्मजीवशास्त्र विभाग) "AIDS समज व गैरसमज" या विषयावर उद्बोधन करण्यासाठी शिबिरार्थींना लाभले होते.

"आपले विश्व" या विषयावर उद्बोधन करण्याकरिता श्री रा.ल.तो. विज्ञान महाविद्यालयाचे प्रा. शैलेश जयस्वाल (भौतिकशास्त्र विभाग) हे आले होते. त्यांनी विद्यार्थ्यांना आपले विश्व, ब्रह्मंड, आकाशगंगा याविषयी माहिती दिली. तसेच

ग्रह-तारे व नत्रक्षां विषयी माहितीसुद्धा त्यांनी शिबिरार्थींना दिली. सायंकाळच्या सत्रात प्रमुख वक्त्या म्हणून डॉ. स्वप्ना लांडे यांचे "वैज्ञानिक दृष्टीकोन व जादूटोणा विरोधी कायदा" या विषयी मार्गदर्शन लाभले.

दि. १९-१२-२०१८ (बुधवार) :

चौथ्या दिवसाच्या सकाळच्या सत्रात प्रार्थना, स्फूर्तीगीते त्याचबरोबर प्राणायामाचे धडे मा. संजय हेडाऊ सर यांनी दिले व स्वच्छता रॅलीचे आयोजन करण्यात आले आणि त्याचबरोबर गावातील नाल्यावर जाऊन वनराई बंधाराचे श्रमदान करण्यात आले. दुपारच्या सत्रात गावातील गावकरीसाठी उन्नत भारत अभियानांतर्गत शेतीपूरक मस्त्यव्यवसाय मार्गदर्शन कार्यशाळेचे आयोजन करण्यात आले होते. कार्यशाळेमध्ये श्री. सुरेश आर. भारती (सहा. आयुक्त मस्त्यव्यवसाय) यांनी मस्त्यव्यवसाय शेतीपूरक जोड धंदा व रोजगार संधी या विषयावर मार्गदर्शन केले आणि त्याचबरोबर श्री. दिनेश घोषे यांनी शासनाच्या विविध योजनांची माहिती दिली आणि अक्यरिअम बांधणी कशी करायची याचे प्रात्यक्षिक करून दाखवले.

"ताण-तणाव मुक्तीचे व्यवस्थापन" या विषयावर मार्गदर्शनासाठी श्रीमती ल.रा.तो. वाणिज्य महाविद्यालयाचे प्रा.डॉ. महेश डाबरे हे आले होते.

दि. २०-१२-२०१८ (गुरुवार) :

गावातील महिलांसाठी "महिला मेळाव्याचे" आयोजन करण्यात आले होते. या कार्यशाळेमध्ये सुंदर माझे आंगण ही रांगोळी स्पर्धा घेण्यात आली आणि गावातील महिलांना दैनंदिन जीवनामध्ये स्वतःच्या प्रकृतीची काळजी कशी घेतली पाहिजे या विषयावर मार्गदर्शन करण्यात आले तसेच लघु उद्योग कार्यक्रमांतर्गत पेपर बॅग्स बनवणे यावर कार्यशाळा घेण्यात आली.

दुपारी ३.०० वा. व्यसनमुक्ती आंदोलन या कार्यक्रमासाठी डॉ. अजय उपाध्याय हे मार्गदर्शक म्हणून लाभले होते. तरुण वयातच या व्यवसायांना आपण कसे बळी पडतो व त्यानंतर व्यसनाधीन होतो, हे अगदी सविस्तर समजावून सांगितले व अंमली पदार्थांचे कशा प्रकारे व्यसन लागते ते शास्त्रीय पद्धतीने समजावून सांगितले. व्यसनमुळे होणारी शरीराची हानी कशी न भरून काढण्यासारखी असते हे सांगत व्यसनांपासून दूर राहण्याचे शिबिरार्थींना आवाहन केले.

आजघडीला भारतीय अर्थव्यवस्थेसमोरील सर्वात मोठे आणि महत्वाचे आव्हान म्हणजे रुपयाचे अवमूल्यन किंवा घसरण. हाच मुद्दा धरून डॉलरच्या तुलनेत रुपयाची घसरण का होते व घसरण झाल्यामुळे अर्थव्यवस्थेवर काय परिणाम होतात, याबद्दल श्री. विजय रुईवाले यांनी सखोल मार्गदर्शन केले.

दि. २१-१२-२०१८ (शुक्रवार)

विद्यार्थ्यांसाठी "विद्यार्थी सुरक्षा आणि सुरक्षात्मक उपाय योजना" विषयावर मा.श्री. गोपाळ मुकुंदे (पो.का. दामिनी पथक अकोला पोलीस) यांनी मार्गदर्शन केले आणि त्याचप्रमाणे मा.श्री. विशाल मोरे (पो.का. दामिनी पथक अकोला पोलीस) यांनी "सायबर क्राइम आणि विद्यार्थी" या विषयावर विद्यार्थ्यांना मार्गदर्शन केले.

सायंकाळच्या सत्रात "कायदेविषयक मार्गदर्शन" ह्या कार्यक्रमाचे आयोजन करण्यात आले होते. या कार्यक्रमाच्या अध्यक्षस्थानी संस्थेचे मानद सचिव मा.अॅड. मोतीसिंहजी मोहता तर मार्गदर्शक म्हणून न्यायाधीश मा. अमित कोकरे, जिल्हा विधी सेवा प्राधिकरण प्रभारी सचिव न्यायाधीश मा.डी.एस. दाभाडे, मा. के.पी. डवणे व मा.जे.व्ही. मस्के, मा. दामोदर कडून, मा. अनिल तापडिया, प्राचार्य मा.डॉ. विजय नानोटी, उपसरपंच मा. उमेश बोपटे, पोलीस पाटील मा. कैलासराव अपोतीकर आदी उपस्थित होते.

दि. २२-१२-२०१८ (शनिवार) :

सातव्या दिवसाच्या सकाळच्या सत्रात प्रार्थना, प्राणायाम, वेगवेगळे योगासने सौ. विभा पाटील मॅडम यांनी करून

श्री राधाकिसन लक्ष्मीनारायण तोष्णीवाल विज्ञान महाविद्यालय, अकोला

दाखवले आणि शिबिरार्थींनी सुद्धा केले आणि त्याचबरोबर श्रमदानाकरिता गावातील लोणार नाल्यावर जाऊन बंधाराचे जवळपास ५० फूट लांब, ३.५ फूट उंच आणि ४ फूट रुंद वनराई बंधाराचे काम पूर्ण करण्यात आले. हा बंधारा बांधताना गावातील सरपंच सौ. लक्ष्मीताई घुसे, उपसरपंच डॉ. उमेश बोपटे ग्रामपंचायत सदस्यांची त्याचप्रमाणे गावातील मंडळींचे सहकार्य लाभले. या वनराई बंधान्याचे आर्थिक मुल्यांकन जवळपास ४०,०००/- ते ५०,०००/- काढण्यात आले आहे. या शिबिराचा बंधारा बांधण्याचा मुख्य उद्देश म्हणजे सर्व गावातील गुरांना पिण्याचे पाणी, गावातील लोकांसाठी पिण्याचे पाणी, शेतीला पाणी या हेतूने एक छोटा तलावावर वनराई बंधारा बांधून पाणी अडवण्यात आले आहे आणि या वनराई बंधाराचा लाभ सर्व गावकऱ्यांना होत आहे.

“आम्ही व आमचे संविधान” या विषयावर मार्गदर्शनासाठी श्री रा.ल.तो. विज्ञान महाविद्यालयाचे प्रा. विनोद देवताळे (रसायनशास्त्र विभाग) हे आले होते. भारतीय संविधान समजावून सांगताना त्यांनी इतिहासातील घडामोडींचा सविस्तरपणे आढावा घेतला. भारतीय संविधान तयार करण्यासाठी डॉक्टर बाबासाहेब आंबेडकर यांनी घेतलेल्या अथक परिश्रमांवरही त्यांनी प्रकाश टाकला.

“आधुनिक तंत्रज्ञान व पर्यावरणाचा न्हास” ह्या विषयावर मार्गदर्शनासाठी श्री शिवाजी कला वाणिज्य व विज्ञान महाविद्यालयाचे प्रा. डॉ.आय.ए. राजा आले होते. आजच्या या वाढत्या लोकसंख्येचा पर्यावरणावर होणारा आघात व यामुळे निर्माण होणाऱ्या समस्या या बाबींवर त्यांनी विद्यार्थ्यांसोबत चर्चा केली. तसेच वाढत्या रासायनिक खतांचा सजीव सृष्टीवर होणारा परिणाम, जंगलतोड, वाढते तंत्रज्ञान यांच्या दुष्परिणामांची जाणीव त्यांनी शिबिरार्थींना करून दिली.

या दिवशीचे शेवटचे सत्र सांस्कृतिक कार्यक्रमांचे होते. या कार्यक्रमात बहुतांशी स्वयंसेवकांनी सहभाग घेतला. शिबिरार्थींनी गीत-गायन, नृत्य आणि नाटिका सादर केल्या. एका पेक्षा एक दर्जेदार कार्यक्रमांनी या संध्येला रंगत आली. सांस्कृतिक कार्यक्रमांना गावकऱ्यांची मोठ्या प्रमाणात उपस्थिती होती.

दि. २३-१२-२०१८ (रविवार) :

२३ डिसेंबर रोजी दुपारच्या सत्रात रासेयोच्या विशेष शिबिराचा समारोप कार्यक्रम पार पडला. या कार्यक्रमाला अध्यक्षस्थानी मा.डॉ. व्ही.डी. नानोटी (प्राचार्य, श्री रा.ल.तो. विज्ञान महाविद्यालय, अकोला) हे लाभले होते. तसेच मा.श्री. सत्यनारायणजी बाहेती (कार्य. सदस्य, दि बी.जी.ई. सोसायटी, अकोला), मा.डॉ. संजय तिडके (जिल्हा समन्वयक, रासेयो, अकोला), मा.डॉ. सुधीर कोहचाळे (क्षेत्रीय समन्वयक, रासेयो, अकोला) या मान्यवरांची प्रमुख उपस्थिती होती. कार्यक्रम अधिकारी प्रा.डॉ. समाधान एल. मुंडे व प्रा.डॉ. रश्मी पी. सावलकर तसेच सह-कार्यक्रम अधिकारी प्रा. शैलेश आर. जयस्वाल व प्रा. सोनाली एन. गवांदे हे देखील उपस्थित होते.

विशेष शिबिर ग्राम आपोती (खु.) या आठ दिवसीय शिबिराचा विस्तृत अहवाल कार्यक्रम अधिकारी डॉ. समाधान मुंडे यांनी प्रस्तुत केला. समारोपीय कार्यक्रम हा विशेषतः विद्यार्थ्यांचे मनोगत आणि सत्काराचा असतो म्हणून या ठिकाणी काही विद्यार्थ्यांनी आपले मनोगत व्यक्त केले.

डॉ. समाधान एल. मुंडे
डॉ. रश्मी पी. जोशी (सावलकर)
प्रा. शैलेश आर. जयस्वाल
कार्यक्रम अधिकारी
राष्ट्रीय सेवा योजना

चित्रबिंब



रा.से.यो. कार्यक्रम अधिकारी व स्वयंसेवक मा.श्री.डॉ. रणजीतजी पाटील यांच्यासोबत वृक्ष लागवड करतांना.



वृक्ष रक्षाबंधन उपक्रमामध्ये सहभागी रा.से.यो. कार्यक्रम अधिकारी व स्वयंसेवक



स्वच्छ भारत अभियान पंधरवाडा अंतर्गत महाविद्यालयाचा परिसर स्वच्छ करतांना रा.से.यो. कार्यक्रम अधिकारी व स्वयंसेवक



रा.से.यो. स्वयंसेवक रस्ता सुरक्षा सप्ताहानिमित्त पथनाट्य सादर करतांना



रा.से.यो. द्वारा आयोजित युवा संसद कार्यक्रम



रस्ता सुरक्षा अभियान अंतर्गत सहभागी अकोला शहर वाहतुक शाखा प्रमुख श्री. विलास पाटील, प्राचार्य, रा.से.यो. पदाधिकारी व स्वयंसेवक



राष्ट्रीय मतदान रॅलीमध्ये सहभागी रा.से.यो. कार्यक्रम अधिकारी व स्वयंसेवक



स्व.प्राचार्य म.गो. जोशी यांच्या स्मृति दिनानिमित्त आयोजित शिबीरामध्ये रा.से.यो. स्वयंसेवक रक्तदान करतांना

चित्रबिंब



रा.से.यो. विशेष शिबीर ग्राम आपोती उद्घाटन कार्यक्रम



रा.से.यो. विशेष शिबीर अंतर्गत ग्राम आपोती येथे स्वच्छता अभियान राबवितांना रा.से.यो. स्वयंसेवक



रा.से.यो. विशेष शिबीर अंतर्गत ग्राम आपोती येथे बंधारा बांधतांना रा.से.यो. स्वयंसेवक



रा.से.यो. विशेष शिबीर अंतर्गत ग्राम आपोती येथे श्रमदान करतांना रा.से.यो. स्वयंसेवक



रा.से.यो. विशेष शिबीर ग्राम आपोती येथे मा. विशाल मोरे व मा. गोपाल मुकुंदे (दामिनी पथक, अकोला पोलीस) द्वारा आयोजित कार्यक्रम 'Cyber Crime & Students'



रा.से.यो. विशेष शिबीर ग्राम आपोती येथे वैज्ञानिक दृष्टीकोन व जादुटोणा विरोधी कायदा या विषयावर मार्गदर्शन करतांना डॉ. स्वप्ना लांडे



रा.से.यो. विशेष शिबीर ग्राम आपोती येथे उन्नत भारत अभियान अंतर्गत आयोजित शेतीपूरक मत्स्यव्यवसाय कार्यशाळा



रा.से.यो. विशेष शिबीर ग्राम आपोती येथे जिल्हा विधी सेवा प्राधिकरण, अकोला द्वारा आयोजित कायदेविषयक मार्गदर्शन कार्यक्रम

‘माय हेल्थ माय रिस्पॉन्सिबिलीटी’ राज्यस्तरीय चर्चासत्र व शिक्षकांची कार्यशाळा

श्री रा.ल.तो. विज्ञान महाविद्यालयात दि. २८ फेब्रुवारी रोजी राष्ट्रीय विज्ञान दिनानिमित्त ‘माय हेल्थ माय रिस्पॉन्सिबिलीटी’ या विषयावर राज्यस्तरीय चर्चासत्र व शिक्षकांची कार्यशाळा संपन्न झाली. कार्यक्रमाला उद्घाटक तथा अध्यक्ष म्हणून दि बेरार जनरल एज्युकेशन सोसायटीचे अध्यक्ष डॉ. आर.बी. हेडा हे लाभले. मुख्य उपस्तीत मायक्रोबॉयलॉजीस्ट सोसायटी इंडियाचे अध्यक्ष, डॉ. अ.एम. देशमुख, दि बी.जी.ई. संस्थेचे मानद सचिव अॅड. मोतीसिंहजी मोहता होते. यावेळी मंचावर बी.जी.ई. सोसायटी सहसचिव, शरद चवरे, कार्यकारीणी सदस्य डॉ. सत्यनारायण बाहेती, अनिलकुमार तापडिया, अभिजीत परांजपे, प्राचार्य डॉ. विजय नानोटी, प्राचार्य डॉ. श्रीप्रभू चापके, चिखली येथील प्राचार्य डॉ. अनिल गारोडे, लातूर येथील प्राचार्य डॉ. अवस्थी, नांदेड विद्यापीठाचे माजी अधिष्ठाता डॉ. वक्ते, डॉ. डी.एस. तांबेकर व डॉ. झिया खान आदी उपस्थित होते. चर्चासत्राचे उद्घाटन डॉ. आर.बी. हेडा यांच्या हस्ते झाले. या चर्चासत्राला सुमारे ३२५ विद्यार्थी, प्राध्यापक, संशोधक यांची उपस्थिती लाभली. अमरावती विद्यापीठ परिक्षेत्रातील अकोला, अमरावती, यवतमाळ, वाशिम, बुलढाणा यासह महाराष्ट्रातील पुणे, नाशिक, चिखली, नांदेड, जालना, मेहकर, औरंगाबाद आदी ठिकाणाहून विद्यार्थी व प्राध्यापक मोठ्या संख्येने उपस्थित होते. महाविद्यालयातील सुक्ष्मजीवशास्त्र विभाग व आय.क्यु.ए.सी. सेलच्या वतीने या चर्चासत्र व शिक्षक कार्यशाळेचे आयोजन करण्यात आले. या कार्यक्रमाचे प्रास्ताविक प्रा.डॉ. हरिष मालपाणी यांनी केले. त्यांनी माझे आरोग्य आणि माझी जबाबदारी या चर्चासत्राचे आयोजन करण्यामागचा उद्देश विशद केला. तर स्वागतपर भाषणात प्राचार्य डॉ. विजय नानोटी यांनी महाविद्यालय विद्यार्थ्यांच्या विकासासाठी काम करणार महाविद्यालय असून महाविद्यालयाचा नावलौकिक संपूर्ण विदर्भात नव्हे तर महाराष्ट्रात उंचाविला व आज इवल्याश्या झाडाचे वटवृक्षात रूपांतर झाल्याची माहिती दिली. डॉ. अ.एम. देशमुख यांनी चर्चासत्र असो वा आंतरराष्ट्रीय, राष्ट्रीय, राज्यस्तरीय कार्यशाळा या यशस्वी होण्यामागे त्या महाविद्यालयाचा व्यवस्थापनाचा मोठा वाटा असतो असे नमूद केले. तर मानद सचिव अॅड. मोतीसिंह मोहता यांनी युद्धक्षेत्रातील विज्ञानाच्या प्रगतीचे उदाहरण देतांना सर्वच क्षेत्रातील प्रगतीसाठी विज्ञान वरदान ठरल्याची माहिती दिली. यावेळी प्रा.डॉ. पी.पी. देवहाते, डॉ. एस.एम. नगराळे, डॉ. अंजली सांगोळे यांनी संपादित केलेल्या सायन्स मॅगझिनचे पाहुण्यांच्या हस्ते विमोचन करण्यात आले. तसेच सुक्ष्मजीवशास्त्र विषयातील चिखली येथील वरिष्ठ प्राध्यापक प्रा. के.डी. पेंशनवार हे सेवानिवृत्त होत असल्यामुळे त्यांचा सत्कार करण्यात आला. आपल्या अध्यक्षीय भाषणात डॉ. आर.बी. हेडा यांनी आम्ही केवळ कर्तव्य आणि अधिकाराची लढाई लढत आहोत या पलिकडे जावून समाजामध्ये परिवर्तन आणावयाचे झाल्यास शिक्षकच ते परिवर्तन आणू शकतात, शिक्षक समाजाचा कणा आहेत, तसेच आपण आपल्या जीवनशैली व आहाराविषयी सजग राहिल्यास या चर्चासत्राचे खऱ्या अर्थाने फलित होईल असे मत व्यक्त केले. उद्घाटन सत्राचे संचालन प्रा.डॉ. सुधिर कोहचाळे यांनी तर आभार प्रदर्शन प्रा.डॉ. उमेश भालेकर यांनी केले.

डॉ. ऐ.एम. देशमुख यांनी बिजभाषण दिले तर गेस्ट लेक्चरमध्ये डॉ. शिवा आयथॉल यांनी अभ्यासपूर्ण माहिती दिली. समारोपिय कार्यक्रमाचे अध्यक्षस्थानी डॉ. अ.एम. देशमुख होते. या सत्रामध्ये यु.जी. पोस्टर प्रेझेंटेशनमध्ये शिवाजी महाविद्यालय, अकोला येथील सागर दुबे याने प्रथम क्रमांक, आदर्श महाविद्यालय, धामणगांव येथील विरल चंद्रांना हिने द्वितीय तर श्री आर.एल.टी. विज्ञान महाविद्यालयाची पल्लवी सोनोने हिने तृतीय क्रमांक पटकाविला. तसेच पी.जी. सेमिनारमध्ये अमरावती विद्यापीठातील योगेश बेले याने प्रथम क्रमांक, शिवाजी महाविद्यालय, अकोला येथील निवेदिता धुर्डे हिने द्वितीय तर एच.पी.टी. महाविद्यालय, नाशिक येथील प्रियंका नलावडे हिने तृतीय क्रमांक पटकाविला. या कार्यक्रमाचे संचालन डॉ. सुधिर कोहचाळे यांनी केले. तर आभार डॉ. हरीष मालपाणी यांनी मानले. या कार्यक्रमाच्या यशस्वीतेकरीता कार्यक्रम आयोजक डॉ. विजय नानोटी यांच्या मार्गदर्शनाखाली डॉ. यु.के. भालेकर, डॉ. हरीष मालपाणी, प्रा. सोनाली गवांदे यांचेसह डॉ. राजेश चंद्रवंशी, डॉ. पूनम अग्रवाल, एम.आर. उबाळे, डॉ. आर.एल. रहाट्यांवकर, डॉ. अ.जी. सरप, प्रा.आर.डी. चौधरी, प्रा. जैस्वाल, के.वाय. पाटील, विजय अळणे, दिपक वानखडे, चंद्रकांत अहिरकर, साहेबराव सोळंके, आनंदा गवळी व महाविद्यालयातील शिक्षक तथा शिक्षकेत्तर कर्मचाऱ्यांनी अथक परिश्रम घेतलेत.

डॉ. हरीष मालपाणी
आयोजक सचिव

डॉ. विजय दि. नानोटी
संयोजक व प्राचार्य

**WORKSHOP ON
CYBER CRIME & WOMEN'S SAFETY**

The district level one day workshop on Cyber Crime & Women's Safety was organized by the NSS team of Shri R.L.T. Science College, Akola. The coordinator of the workshop was Dr. Rashmi P. Joshi (Sawalkar). The Chairperson of the workshop was Hon. Dr. R.B. Heda, President, The B.G.E. Society, Akola the Chief-guest of the programme was Hon. Adv. Motisinghji Mohta, Honourary Secretary, The B.G.E. Society, Akola and Shri Vijaykantji Sagar, Additional S.P., Akola. Dr. Sanjay Tidke, District coordinator N.S.S. Akola, Miss. Chaya Wagh, P.S.I. and Chief of Damini Squad, Akola, Mr. Vishal Morey and Mr. Gopal Mukunde, S.W.A.S. Team, Akola Police were the speakers of the programme. The Welcome speech was delivered by respected Principal, Dr. V.D. Nanoty and Hon. Chief Guest, Mr. Vijaykantji Sagar, Additional Superintendent of Police, Akola Dist. delivered his introductory speech and gave his valuable guidance to the students about women empowerment and safety. Mr Vishal More and Mr. Gopal Mukunde delivered their lectures on the topics "**Social Media and Students**" and "**The Precautionary Measures while using Social media**". Miss. Chaya Wagh, P.S.I. speaks on "**Good Touch-Bad Touch**". She aware the girl students by giving them many examples and told them about the precautions to be taken for sexual harassments, eve teasing and about the 'POSCO Act, 2012'. About 265 participants were registered. The Akola District Police Dal Inaugurated "JANANI 2" Campaign on 11th of July 2018 and to aware the students the NSS Team of our college organized the workshop, for which I got felicitated by the hands of Hon. State Minister Dr. Ranjitji Patil Sir, in the Valedictory Function of "JANANI 2".

Dr. Rashmi P. Joshi (Sawalkar)
Coordinator

**Workshop on
EUREKA
(Emerging Universe of Research Education & Knowledge Ascent)**

Shri R.L.T. College of Science, Akola, State Institute of Science Education, Nagpur, Department of Education (Sec.), Z.P. Akola and Akola District Science Forum jointly organized a one Day Workshop EUREKA (Emerging Universe of Research Education & Knowledge Ascent) for High School students and teachers on 13th March 2019. Total 118 students and 30 teachers participated in the event. Principal Dr. V.D. Nanoty presided over the programme while Dinesh Tarole, Deputy Education Officer, inaugurated the workshop. Dr. Ravindra Bhaskar, coordinator of Akola District Science Forum delivered welcome speech and opening remark. Principal Dr. Nanoty said that students should develop scientific attitude. Prof. Dattaraj Vidyasagar, Dr. Sanjay Tidke (Dist. Coordinator of NSS), Prof. Shailesh Jaiswal, Vishal More (Damini Squad member) were the resource persons. They guided on topic 'Internet Awareness', 'Superstitions & Science', 'Know Our Universe' and 'Cyber World & Security' respectively. Mr. Prakash Mukund, Education Officer, guided the participants. Laboratory visits were arranged for participants. Science Aptitude Test was conducted. Winners of Science Aptitude Test were felicitated.

Dr. Sudhir Kohchale and Prof. Shailesh Jaiswal conducted the proceedings whereas Madhav Munshi, Principal, New English High School, proposed a vote of thanks. Coordinator Dr. Archana Sawarkar, Organizing committee members Dr. S.R. Kohchale, Dr. R.P. Joshi, Mr. R.B. Ghayalkar, Dr. H.S. Malpani, S.R. Jaiswal, A.B. Khedkar, teaching and non teaching staff and students worked hard for success of workshop.

Web link: <https://www.rltsc.org/2019/03/one-day-workshop-eureka/>

Dr. Archana S. Sawarkar
Coordinator

Workshop on Self Employment through Fisheries

One day workshop on 'Self Employment through Fisheries' was organized jointly by Shri R.L.T. College of Science, Akola, NSS Unit, Department of Fisheries, Govt. of Maharashtra, Office of the Asst. Commissioner of Fisheries (Tech.), Akola. The workshop was held on 19th Dec. 2018 at adopted village Aapoti (Kd) under the guidance of Principal Dr. Vijay D. Nanoty and Mr. Suresh R. Bharti, Asst. Commissioner of Fisheries, Akola. Total 215 participants including 162 students, 38 villagers and 15 staff members participated in workshop. Damodhar Kadu (President of K.S.P. Society, Aapatapa), Dinesh Dhope (Asst. Fisheries Development Officer, Mahan), Lakshmitai Ghuse (Sarpanch, Aapoti (Kd) graced the inaugural function. Dr. Archana Sawarkar, Coordinator of workshop delivered introductory remark and introduced the guests. Damodhar Kadu guided the gathering on the benefit of adopting self employment. In the first session, Dinesh Dhope guided on Aquarium keeping maintenance & employment opportunities. He also informed about various schemes implemented by Fisheries Department of Maharashtra Govt. In the second session, Prof. Ranjana Dharmale, Brijlal Biyani College, Amravati, explained about Introduction to fishes & their caring. Dhope gave demonstration on Construction of fish aquarium. In the concluding session, Dr. Sanjay Tidke (Dist. Coordinator N.S.S., Akola) informed about various schemes implemented under Unnat Bharat Campaign and Baliraja Chetna campaign. In his presidential speech, Dr. Umesh Bhalekar called upon youths to look at self employment with positive attitude.

Dr. Sudhir Kohchale conducted the programme whereas Dr. Samadhan Munde proposed vote of thanks. Coordinator Dr. Archana Sawarkar and organizing committee members Dr. Sudhir Kohchale, Dr. Rashmi Joshi (Sawalkar), Mr. Sunil Gupta, Miss. Sonali Gawande, Mr. Shailesh Jaiswal, student representative Mr. Govind Andhale, Miss Yashshree Daberao and NSS volunteers took efforts for success of workshop.

Web link: <https://www.rltsc.org/2018/12/one-day-workshop-on-self-employment-through-fisheries/>

Dr. Archana S. Sawarkar
Coordinator

RESEARCH ACTIVITY

REPORT

1. PAPER PUBLICATION

Sr. No.	Department	Name of Author	Title of Research Paper	Name of Journal Volume (National / International)	Impact Factor
1	Microbiology	Dr. H.S. Malpani (1)	Microbiological study of waste disposal and its efficient management.	Research Journey Sp. Issue 110(E) Feb. 2019	6.261 (SJIF)
2	Microbiology	Ms. S.N. Gawande (1)	Phytochemical and Antibacterial properties of Ethanolic extract of <i>Syzygium cumini</i> seed on pathogenic bacteria.	Journal of Plant Disease Science Vol.13(1): 56-61, 2018	6.261 (SJIF)
3	Chemistry	Dr. P.P. Deohate (6)	1. Analysis of Drug Ofloxacin in Bulk & Single Component Pharmaceutical Tablets by Non-Aqueous Potentiometric Titration Method.	Journal of Indian Chemical Society 95, 559, 2018	0.204
			2. Assessment of Ground Water Quality of Agriculture Land For Irrigation Purpose In Some Villages of Akola District of Maharashtra, India.	Journal of Biological and Chemical Chronicles, 4(2), 90, 2018	-
			3. Determination of Physico-Chemical Parameters of Ground Water Used For Irrigation In Villages of Akola District of Maharashtra, India.	Journal of Biological and Chemical Chronicles, 4(2), 124, 2018	-
			4. Non-Aqueous Potentiometric Analysis of Drug Furosemide In Bulk And Single Component Pharmaceutical Tablets.	Research Journey International E-Research Journal, 110(B), 271, 2019	6.261 (SJIF)
			5. Non-Aqueous Potentiometric Determination of Drug Paracetamol-Mefenamic Acid in Single And Double Component Pharmaceutical	Journal of Indian Chemical Society 96, 311, 2019	0.204

			6. Microwave Irradiative Synthesis of Triazine Substituted Pyrazoles And Study of Antitubercular And Antimicrobial Activities	Asian Journal of Chemistry 31(5) 1087, 2019	0.140
4	Chemistry	Dr. P.T. Agrawal (3)	1 Synthesis And Characterization of Nanoparticles of 1-Hepta-O-Benzoyl- α -D-Lactosyl-5-Aryl-2,4-Dithiobiurets.	Technical Research Organization India Vol- 6, Issue-1. 2019. ISSN 2393-8374. Pg. No. 1264-1266.	-
			2. Microbial Evaluation of Ginger Oil Against Dandruff.	Research Journey International E-Research Journal Special Issue 110(B). Feb. 2019. ISSN- 2348-7143	6.261
			3. Microbial Evaluation of Nanoparticles of Sum New Lactosyl 5-Aryl 2,4 Dithiobiurets	Research Journey International E-Research Journal Special Issue 110(B). Feb. 2019. ISSN-2348-7143	6.261
5	Chemistry	Dr. P.R. Kawle (1)	Impact of Idol Immersion on Water Quality of Pinglakshi Lake of Risod in Washim District.	AJANTA, Vol III, Isu.1, ISSN 2277-5730	
6	Chemistry	Dr. K.M. Heda (3)	1 Spectral Study And Scuring of 1-Phenyl 3-Substituted for An Antimicrobial Activity.	Recent Innovation In Science Engineering And Technology -2018 ISBN 978-93-5300-458-3	-
			2. Synthesis Structural Study And Biological Evolution of Benzothizolyl Thicarbamide	Research Journey International E Research Journal, Special Issue 110(B), Feb. 2019 ISSN – 2348-7143	-
			3. Synthesis Characterization of 1-Phenyl 3(2) – Hydrazine-1,3 Subsited Benzothiozoly Thiocarbamide	Technical research Organization India, Vol 6 Issue 1, 2019] International Journal, of Engineering & Scientific Research. ISSN-2393-8374.	-

7	Chemistry	Dr. A. G. Sarap (1)	A Novel Studies of Synthesis of Nano Particles of 2-5-Tetra-O-Acetyl-B-Dgalactosyl-1-Aryl-5-Tetra-O-Acetyl-B-D-Glucosyl -2-1 isothiobiurets And There XRD Studies.	Research Journey International E Research Journal, Special Issue 110(B), Feb. 2019 ISSN – 2348-7143 P.No. 57	6.261
8	Chemistry	Mr. V.D. Deotale (1)	"Synthesuis of Thizole, Thiazinan, Thiadiazin, Thiazolidin, Triazine, Thixo-Pyrimidin and Thioxo-Imidazolidine, by Inter-Intra Molecular Cyclization"	Indian Journal of Chemistry; Volume 57B, Dec. 2018	0.525 (JCR 2017)
9	Chemistry	Mr. S.C. Zyate (1)	Antimicrobial Activity of Chalcone derivativesand their synthesis.	Research Journey 110(B), Feb-2019,	6.261
10	Zoology	Dr. S.M. Nagrale (1)	Biological aspects of Mycophagous Trips Elaphrothrips Procer (Schmutz) (Thysanoptera: Phlaeothripidae)	Research Journey International E Research Journal (Feb. 2019), Special issue vol.110(G), 114-117 (ISSN: 2348-7143),UGC App. J. No. 40705.	6.261 (SJIF)
11	Zoology	Dr. A.S. Sawarkar (2)	1. AFM study of egg sac silk fibers of the giant wood spider <i>Nephila pilipes</i> (<i>Araneae, Araneidae</i>)	International Journal of Current Engineering & Scientific Research (IJCESR),2019.Vol.6 (1), ISSN (Print): 2393-8374, (Online): 2394- 0697, pp. 97-100.	6.263
			2. Orb web features of giant wood spider <i>Nephila pilipes</i>	Research Journey International E Research Journal (Feb.2019), Spe. issue vol. 110 (G), 145-149 (ISSN: 2348-7143), UGC App. J. No. 40705.	6.261
12	Zoology	Dr. R.P. Joshi Sawalkar (1)	Biochemical changes in midgut tissue of silkworm <i>Bombyx mori</i> , during Grasserie infection.	PIJR Print ISSN: 2250-1991 Vol-8/Issue-4/April-2019	6.761

श्री राधाकिसन लक्ष्मीनारायण तोष्णीवाल विज्ञान महाविद्यालय, अकोला

13	Botany	Mrs. V.N. Badgujar (2)	1. Review of Traditional & "phytochemical investigations of essential oil yielding plant- Pelargonium gravelolens"	Research journey International E-Research journal	6.261
			2. Survey of phytochemically riched wild vegetables used by Tribels of Katepurna sanctuary, Vidarbha region.	International journal of Current Engineering and Scientific Research (IJCESR)	IARC (JCRR) 0.916 GIF.695 SIFO.73 JIF 0.9
14	Botany	Dr. P.M. Khadse (2)	1. Pharmacognostic and Phytochemical Investigation on Cleistanthus collinus (Roxb.) Benth.Ex.Hook.F.	Research Journey International E-Research Journal	SJIF- 6.261
			2. "Ethnobotanical Studies on Moringa oleifera (Lam.) Analytical studies"	'Ajanta' An International Multidisciplinary Quarterly Research Journal	5.5
15	Botany	Dr. A.A. Sangole (3)	1. "Phytochemical screening of pollen of Catheranthuroseous plant"	International Journal of Current Engineering and Scientific research (IJCER) Vol 6 Issue 1, Jan.2019	IARC (JCRR) 0.916 GIF)695 SIFO.73 JIF 0.9
			2. "Pollen Histochemical analysis of Gossypium sp.	International E-Research Journal ISSN 2348-7143 Special issue 110(E) Feb. 2019	6.261
			3. "Pollen Viability of selected Varieties of Gossypium Sp".	International Multidisciplinary Quarterly Research Journal AJANTA Vol-III, Issue-I, Part V, Jan-March 2019	5.5
16	Botany	Mr. S.V. Madavi (1)	Ethnobotanical Studies on Moringa oleifera (Lam.) Analytical studies	Research Journey International E-Research Journal Vol110, Issue-I, pp 31-34 (Feb. 2019) ISSN: 2348-7143 Impact factor: 6.261	6.261
17	Physics	Mr. P.P. Gedam (2)	1. One step galvanostatical synthesis and characterization of acid doped PANI thin films.	Research Journey International E-Research Journal Vol110, Issue-I, pp 31-34 (Feb-2019) ISSN: 2348-7143 Impact factor: 6.261	6.261

			2. Electrochemically synthesis and characterization of polyaniline thin films.	Pune Research Times <i>An International Journal of Contemporary Studies</i> ISSN 2456 – 0960 Spe. Issue 01 (Feb. 2019)	3.18
18	Physics	Dr. R.M. Agrawal (4)	1. Humidity Sensing Properties of BaTiO ₃ doped ZnO Thick Films	Ajanta Volume-VIII, <i>Issue-I, pp 33-38</i> (January 2019) ISSN: 2277-5730 Impact factor: 5.5	5.5
			2. Synthesis and Humidity Sensing Investigation of Nanostructured ZnO doped SnO ₂ Thick Films	Research Journey <i>International E-Research Journal Volume 110, Issue-I, pp 25-30</i> (Feb-2019) ISSN: 2348-7143 Impact factor: 6.261	6.261
			3. Water Vapour Sensing Mechanism of PANI doped with ZnO Nanocomposites	Research Journey International E-Research Journal Volume 110, Issue-I, pp 250-253 (Feb-2019)) ISSN: 2348	6.261
			4. Study of AC Electrical Conductivity and Dielectric Properties of Polypyrrole based ZnO Nanocomposites	Research Journey <i>International E-Research Journal Volume 110, Issue-I, pp 254-258</i> (Feb-2019)) ISSN: 2348-7143	6.261
19	Computer Science	Mr. R.B. Ghayalkar (1)	An Emerging Field IOT : Review	Research Journey International E-Research Journal ISSN-2348-7143 Spe. Iss – 110 (C)	6.261
20	Electronics	Mr. R.G. Chavan (1) Mr. Yash Vidyasagar	Microcontroller Based Techeye System for Obstacle Detection & Ranging To Assist Blind Person	Research Journey <i>International E-Research Journal, UGC Approved Journal February-2019</i> ISSN :2348-7143	(SJIF) 6.261, (CIF) 3.452
21	Electronics	Mr. R.D. Chaudhari (1) Mr. Dattaraj Vidyasagar	Arduino Uno Based Accident Avoiding System in Mountainous Area	Research Journey <i>International E-Research Journal, ISSN-2348-7143</i> February-2019	(SJIF) 6.261

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22	Department of Sports & Physical Ed.	Dr. R.D. Chandrawanshi (2)	1. Application of Advanced Technology to enhance the performance of Wrestlers	Aayushi International Interdisciplinary Research Journal (ISSN-2349-638x) Special Issue Published in Dec.2018	4.574
			2. Healthy Diet affects the Youth	Global Journal of Applied Social, Political, Sports & Sci. ISSN 2278-4349 March 2019.	1.90
23	English	Mr. A.B. Khedkar (1)	Poems-Let's do it for Kerala, Gods own country, and one day.	Langlit: an international peer revied open access journal.	4.23

2. PAPER PRESENTED IN CONFERENCE / SEMINAR

Sr. No.	Department	Name of Author	Title of Research Paper	Name & Place of Conference/Seminar/ Workshops	Year/ Date
1	Microbiology	Dr. V.D. Nanoty (2)	1. Waste management : An eco-friendly solution to burning problem and it's application.	Shankarlal Khandelwal Arts, Science and Commerce College, Akola (MS)	23 Feb. 2019
			2. Isolation of microbes associated with biofilm formation on removable partial denture.	Department of Zoology, SGBAU, Amravati	22-23 Jan. 2019
2	Microbiology	Dr. U.K. Bhalekar (2)	1. Production of plant growth promoter by using fermented extract of <i>Amaranthus spinosus</i> and Cow urine	Shankarlal Khandelwal Arts, Science and Commerce College, Akola (MS)	23 Feb. 2019
			2. Isolation of microbes associated with biofilm formation on removable partial denture.	Department of Zoology, SGBAU, Amravati	22 and 23 Jan. 2019
3	Microbiology	Dr. H.S. Malpani (2)	1. Prevalence of Bacterial Pathogens in hospital air and threat of MDR nosocomial infections.	106 th Indian Science Congress at Lovely Professional University, Phagwara, Punjab.	3-7 January 2019
			2. Consequences of River dumping on algal biodiversity of Morna River	Bio waste as Bio recourse at Shankarlal Khandelwal College, Akola	23 rd Feb. 2019

4	Microbiology	Ms. S.N. Gawande (2)	1. Isolation of microbes associated with biofilm formation on removable partial denture.	Department of Zoology, SGBAU, Amravati	22 and 23 Jan. 2019
			2. Production of plant growth promoter by using fermented extract of <i>Amaranthus spinosus</i> and Cow urine	Shankarlal Khandelwal Arts, Science and Commerce College, Akola (MS)	23 Feb. 2019
5	Chemistry	Dr. P.P. Deohate (1)	Non- Aqueous Potentiometric Analysis of Drug Furosemide in Bulk and Single Component Pharmaceutical Tablets.	National Conference on Emerging Trend In Science, Vidya Bharti Mahavidyalaya, Amravati	1,2 Feb. 2019
6	Chemistry	Dr. P.T. Agrawal (2)	1. Synthesis And Characterization of Nanoparticles of 1- Hepta O- Benzoyl B-D-Lactosyl 5-Aryl 2,4 Dithiobiurets.	International Conference on Multifunctional Advanced Material ICMAM-2018	5-7 October 2018.
			2. Microbial Evaluation of Nanoparticles of Some New Lactosyl 5-Aryl 2,4 Dithiobiurets.	Emerging Trends In Science, Vidya Bharti Mahavidyalaya, Amravati	1 To 2 Feb. 2019.
7	Chemistry	Dr. P.R. Kawle (2)	1. Synthesis of 25b, Triary; Pyrazine And 2,2,4,5- Tetra Aryl Imidazol Over Ecofriendly Lemon Juice Catalyst.	Indian Science Congress Association Future India: Science And Technology At LPU, Jalandar	3-7Jan. 2019.
			2. Impact of Idol Immersion Om Water Quality of Pinglakshi Lake of Risod In Washim, District	National Conference on RAISAT-2019 At GSG College Umerkhed, District : Yavatmal.	5-6 March 2019
8	Chemistry	Dr. K.M. Heda (2)	1. Synthesis Structural Study And Biological Evaluation of Pharmacologically Important -1,3 -Substituted Benzothizoly Thiocarbamide	Emerging Trends In Science, Vidya Bharti Amravati.	1-2 Feb. 2019
			2. Synthesis, Characterization of 1-Phenyl-3(2)Hydrazine-1,3 - Substituted Benzo Thiozoly Thiocarbamide.	----	---
9	Chemistry	Dr. A.G. Sarap (2)	1. A Novel Studies of Synthesis of Nano Particles of 2-5-Tetra-O-Galactosyl 1-Aryl-5tetra-O-Acetyl-Å-	National Conference Emerging Trends In Science – 2019 Vidya Bharti College,	1-2 Feb. 2019

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			Dglucosyl 2-1 Isothiobiures And Their XRD Studies	Amravati.	
			2. ----	International Conference on RAIPLS –2019, in University Jaipur.	
10	Chemistry	Mr. V.D. Deotale (1)	HPLC Purification Technique: Synthesis of Unsymmetric 1,3-Disubstituted Thiobarbituric Acids	International Conference on Multifunctional Advanced Materials (ICMAM) 2018 At Kamla Nehru Mahavidyalaya Nagpur, Maharashtra, India.	05-07 October 2018
11	Chemistry	Mr. S.C. Zyate (1)	Antimicrobial Activity of Chalcone derivatives and their synthesis.	Emerging Trends In Science, Vidya Bharati College, Amravati.	1-2 Feb. 2019
12	Zoology	Dr. A.S. Sawarkar (3)	1. AFM study of egg sac silk fibers of the giant wood spider <i>Nephila pilipes</i> .	International Conference on “Multifunctional Advanced Materials”, at Kamla Nehru Mahavidyalaya & Dharampeth M.P. Deo Memorial Sci. College, Nagpur	5-7 Oct. 2018
			2. Impact of Zinc sulphate on gills of fish <i>Ophiocephalus punctatus</i>	National Conference on “Recent Trends in Life Sciences for Sustainable Development” at SGB Amravati University, Amravati.	22-23 Jan. 2019
			3. Orb web features of giant wood spider <i>Nephila pilipes</i>	National Conference on “Emerging Trends in Sciences”, Vidya Bharati Mahavidyalaya, Amravati	1-2 Feb. 2019
13	Zoology	Dr. R.P. Joshi Sawalkar (3)	1. Extraction of amino acids from fecal matter of silkworm <i>Bombyx mori</i> .	One day National Seminar on Trends in Bioresource Management and Nanotechnology at C.S.B.R, RTM. Nagpur University, Nagpur.	26 October 2018

			2. Silkworm and seasonal infections in Western Vidarbha: Maharashtra	HumboldtKolleg on Comparative Endocrinology and Physiology at RTM Nagpur University, Nagpur	7th to 9th Jan. 2019
			3. Variation in catalase activity in the silk worm Bombyx mori during, infection with Bacterial Flacherie	Recent Trends in life sciences for sustainable development (RTLSSD) -2019, Dept. of Zoology SGBAU Amravati	22 nd and 23 rd Jan. 2019
14	Botany	Mrs. V.N. Badgujar (2)	1. "Survey of phytochemically Riched wild vegetables used by Tribels of Katepurna Sanctuary, Vidarbha region"	International Conference on Multifunctional Advance Materials ICMAM-2018, Kamala Neharu Mahavidyalaya, Dharmpeeth & M.P. Deo Memorial Science College, Nagpur.	05-07 Oct. 2018
			2. "Review of Traditional & phytochemical investigations of essential oil yielding plants Pelargonium gravelolens"	"Emerging Trends in science" held at Vidyabharati Mahavidyalaya, Amravati	01.02 2019
15	Botany	Dr. P.M. Khadse (1)	"Ethnobotanical Studies on Moringa oleifera (Lam.) Analytical studies"	National Conference on Emerging Trends in Science, Held at Vidyabharati Mahavidyalaya Amravati.	1&2/02/ 2019
16	Botany	Dr. A.A. Sangole (3)	1. "Phytochemical screening of pollen of Catheranthureseusplant"	International Conference on Multifunctional Advanced Materials ICMAM-2018.Kamlanehru Mahavidyalaya, Nagpur And Dharampeeth M.P. Memorial Science College, Nagpur.	5 th to 6 th October 2018
			2. "Pollen Histochemical analysis of Gossypium sp".	<i>Emerging Trends in Science</i> Organised by Vidyabharti Mahavidyalaya Amravati	1 st and 2 nd February 2019

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			3. Pollen Viability of selected Varieties of Gossypium Sp.	National Conference on Recent Advances in Science and Technology (RAISAT-2019) Gopikabai Sitaram Gawande Mahavidyalaya Umarched	5 th to 6 th March,
17	Botany	Mr. S.V. Madavi (1)	Ethnobotanical Studies on Moringa oleifera (Lam.) Analytical studies	National Conference on Emerging Trends in Science, Held at Vidyabharati Mahavidyalaya Amravati.	1&2/02/2019
18	Physics	Mr. P.P. Gedam (2)	1. One step galvanostatical synthesis and characterization of acid doped PANI thin films.	National Conference on Emerging Trend in Sciences at Vidyabharati College, Amravati	1 st -2 nd Feb, 2019
			2. Electrochemically synthesis and characterization of polyaniline thin films	National conference on Nanomateriala and their applications critical at Arts, Comm. & Science College, Kille-Dharur Dist. Beed.	14 th Feb, 2019
19	Physics	Dr. R.M. Agrawal (1)	Synthesis and Humidity Sensing Investigation of Nanostructured ZnO doped SnO ₂ Thick Films	National conference on "Emerging Trends in science" which is organised by Vidya Bharati Mahavidyala, Amravati	1 st -2 nd Feb. 2019
20	Physics	Mr. S.R. Jaiswal (1)	Visible Quantum Cutting in KMgF ₃ Co-doped with Gd ³⁺ and Eu ³⁺ Phosphor	International Conference on Luminance and its Applications (ICLA) Jan-2019 at Ravishankar Shukla University, Raipur	7-10 Jan. 2019
21	Computer Science	Mr. R.B. Ghayalkar (1)	An Emerging Field IOT: Review	National Conference on Emerging Trends in Science. Vidya Bharati Mahavidyalaya, Amravati	1 & 2 Feb. 2019
22	Electronics	Mr. R.G. Chavan (1)	Microcontroller Based Techeye System for Obstacle Detection & Ranging To Assist Blind Person.	National Conference on Emerging Trends in Science. Vidya Bharati Mahavidyalaya, Amravati	1,2 Feb. 2019

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23	Electronics	Mr. R.D. Chaudhari (1)	Arduino Uno Based Accident Avoiding System in Mountainous Area ACROSS U-Turn	National Level Conference on Emerging Trends in Science. Vidya Bharati MahaVidyalaya, Amravati	1,2 Feb. 2019
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3. PARTICIPATION IN CONFERENCE / SEMINAR / WORKSHOP

Sr. No.	Department	Name of Participant	Theme & Place of Conference/seminar/workshops	Level : National/ State / District	Year/ Date
1	Microbiology	Dr. H.S. Malpani (4)	1. One Day National Conference on New Methodology of NAAC assessment to nurture quality enhancement in Higher Educational Institution, Smt. L.R.T. College of Commerce, Akola	National	29 th Sept. 2018
			2. Trends in Genetic modification Badrinarayan Barwale Mahavidyalaya (Webinar)	International	9 th Feb. 2019
			3. One day state level symposium on Research supervisor under new guideline: duties & Role Govt. Vidarbha Institute of Science and Humanities, Amravati.	State	5 th April, 2019
			4. One day National workshop Level seminar cum Workshop on Soap and Perfume making. Shri R.L.T. College of Science, Akola	National	8 th Sept. 2018
2	Microbiology	Ms. S.N. Gawande (2)	1. International conference on Microbiome Research NCCS, Pune	International	19-22, Nov. 2018
			2. One day National workshop Level seminar cum Workshop on Soap and Perfume making Shri R.L.T. College of Science, Akola.	National	2018
3	Chemistry	Dr. P.P. Deohate (3)	1. "National Level Seminar Cum Workshop on 'Art of Perfume and Soap Making' Department of Chemistry, Shri R.L.T. College of Science, Akola	National	8 th Sept. 2018

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			2. "AUCTA's 20 th Annual Convention and Seminar on Research Methodology in Current Context" Organized by AUCTA at Shri Shivaji Science College, Amravati	University	2nd Dec. 2018
			3. "State Level Seminar on My Health My Responsibility: Complementary to Medicine and Health Care" and "Teacher Workshop on Teaching Constrains In Microbiology and Allied Science" Department of Microbiology, Shri R.L.T. College of Science, Akola.	State Level	28 Feb. 2019
4	Zoology	Dr. S.M. Nagrale (2)	1. "National Level Seminar Cum Workshop on 'Art of Perfume And Soap Making' Organized by Department of Chemistry, Shri R.L.T. College of Science, Akola	National	8 Sept. 2018
			2. Seminar on "My Health, My Responsibility: Complementary to Medicine & Health Care" at Shri R.L.T. College of Science, Akola.	State Level	28 Feb. 2019
5	Zoology	Dr. A.S. Sawarkar (9)	1. One day Workshop on "Performance Based Appraisal System, PBAS-API" Arts, Commerce & Science College, Amravati.	University Level	26 June, 2018
			2. One day Workshop on "Cyber Crime & Women's Safety" at Shri R.L.T. College of Science, Akola	District Level	20 July, 2018
			3. One day Workshop on "Eco-friendly Ganesha Idol Preparation" at Shri R.L.T. College of Science, Akola	District Level	06 Sept. 2018
			4. One Day Workshop on "Art of Perfume and Soap Making" at Shri R.L.T. College of Science, Akola	National Level	08 Sept. 2018
			5. One day National Conference on "New Methodology of NAAC Assessment to nurture quality enhancement in higher Educational Institutions" at Smt. L.R.T. College of Commerce, Akola.	National Level	29 Sept. 2018

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			6. Skill Development programme on "Reservoir Fisheries Development" at S.K. College, Akola	State Level	29-31, Oct. 2018
			7. One Day Workshop on "Self Employment through Fisheries" at Aapoti (Kd), Akola.	University Level	19 Dec. 2018
			8. One Day Workshop on "Teaching Methodology: Need of Today's Higher Higher Education" at Rajarshee Shahu Science College, Chandur Rly.	State Level	04 Jan. 2019
			9. Seminar on "My Health, My Responsibility: Complementary to Medicine & Health Care" at Shri R.L.T. College of Science, Akola.	State Level	28 Feb. 2019
6	Zoology	Dr. S.R. Kohchale (2)	1. One Day Workshop on "Art of Perfume and Soap Making" at Shri R.L.T. College of Science, Akola	National Level	08 Sept. 2018
			2. Seminar on "My Health, My Responsibility: Complementary to Medicine & Health Care" at Shri R.L.T. College of Science, Akola	State Level	28 Feb. 2019
7	Zoology	Dr. R.P. Joshi Sawalkar (4)	1. One day national level seminar cum workshop on "Art of Perfume & Soap Making" at Shri R.L.T. Science College, Akola.	National Level	08/09/18
			2. Two day workshop on "Ecofriendly Ganesha Idol Preparation" at Shri R.L.T. Science College, Akola.	University level	06/09/18
			3. One Day Workshop on "Self Employment Through Fisheries" at Shri R.L.T. Science College, Akola	University Level	19/12/18
			4. One Day State Level Seminar on My health, "My responsibility: Complementary to medicine & Health care" at Shri R.L.T. Science College, Akola.	State Level	28/02/19
8	Zoology	Dr. R.L. Rahatgaonkar (3)	1. One day national level seminar cum workshop on "Art of Perfume & Soap Making" Shri R.L.T. Science College, Akola.	National Level	08/09/18

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			2. One day National Conference on "New Methodology of NAAC Assessment to nurture quality enhancement in higher Educational Institutions" at Smt. L.R.T. College of Commerce, Akola.	National Level	29 Sept. 2018
			3. One Day State Level Seminar on My health, "My responsibility: Complementary to Medicine & Health Care" at Shri R.L.T.Science College, Akola.	State Level	28/02/19
9	Botany	Mrs. V.N. Badgujar (09)	1. International Conference on Multifunctional Advance Materials ICMAM-2018, Kamala Nehru Mahavidyalaya, Dharmpeeth & M.P. Deo Memorial Science College, Nagpur	International	05-07 Oct. 2018
			2. "Emerging Trends in Science" Vidyabharathi Mahavidyalaya, Amaravati	National	1st Feb. 2019
			3. Workshop on "Cyber Crime & Women's Safety" organized by Shri R.L.T.College of Science, Akola	District	20th July, 2018
			4. One day National level seminar cum workshop on "Art perfume & Soap Making" organised by Dept. of Chemistry Shri R.L.T. College of Science, Akola	National	8th Sept. 2018
			5. Attended workshop on "Flower Structure & types of inflorescences" organised by ASC College, Kiran Nagar, Amaravati.	Inter Collegiate	1st Oct. 2018
			6. Attended one day workshop on "Seasonal Flower" organised by Department Botany Vidyabharathi Mahavidyalaya, Amaravati	District	20th Oct. 2018
			7. Attended and Participated in one day workshop on 'Patent drafting filing & processing' held at Vidyabharathi Mahavidyalaya, Amaravati	District	29th Nov. 2018

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			8. One day workshop on "Self Employment Through Fisheries" organised by B.G.E. Society's Shri R.L.T. College of Science, Akola in colabration with Dept. of Fisheries, Govt. of Maharastra at N.S.S. Residential Camp–Apoti Kd. Dist. Akola	District	19th Dec. 2018
			9. State level Seminar on "My Health My Responsibility" At Shri R.L.T. College of Science, Akola	State	28 Feb. 2019
10	Botany	Dr. P.M. Khadse (05)	1. "Recent Advance in Science and Technology", Gopikabai Sitaram Gawande Mahavidyalaya, Umardhed.	National Conference	5-6 March 2019
			2. "Emerging trends in science", held at Vidyabharati Mahavidyalaya, Amravati.	National Conference	1-2, Feb. 2019
			3. "Arts of perfume and soap making" Organized by Dept. of Chemistry, Shri R.L.T. College of Science, Akola.	National Conference	8 Sept. 2018
			4. "Rain Water Harvesting" organized by Dept of Botany and Club Enviro under the Aegies of Vidyabharati GEMS, Amravati.	State Level Workshop	28th July, 2018
			5. "My Health My Responsibility : Complementary to medicine and Health Care" organised by Dept. of Microbiology, Shri R.L.T. College of Science, Akola.	State Level Seminar	28 Feb. 2019
11	Botany	Dr. A.A. Sangole (3)	1. One day National level Seminar cum workshop on "Art of Perfume & Soap Making" (Skill development and self employment) Shri R.L.T. College of Science, Akola.	National Workshop	8th Sept. 2018
			2. One day workshop on "Cyber Crime and Women safety" Shri R.L.T. College of Science, Akola	District	20 July, 2018
			3. State level seminar on "My Health My Responsibility : Complementary to Medicine & Health Care" Shri R.L.T. College of Science, Akola	State Level Seminar	28th Feb., 2019

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12	Botany	Mr. S.V. Madavi (1)	1. "Arts of perfume and soap making" organized by Dept. of Chemistry, Shri RLT College of Science, Akola.	National	8th Sept. 2018
			2. "My Health My Responsibility : Complementary to medicine and Health Care" Organised by Dept. of Microbiology Shri R.L.T. College of Science, Akola	State Level Seminar	28th Feb., 2019
13	Physics	Mr. P.P. Gedam (3)	1. Art of Perfume & Soap Making (Skill development and self employment) at Shri R.L.T. College of Science, Akola	National	8 th Sept. 2018
			2. My health my responsibility : at Shri R.L.T. College of Science, Akola	State	28 th Feb. 2019
			3. Seminar Competition on Topology at Shri R.L.T. College of Science, Akola	University	12th March, 2019
14	Physics	Dr. R.M. Agrawal (4)	1. Recent Advanced in Science and Technology" at Gopikabai Sitaram Gawande College, Umardhed	National	5-6 March, 2019
			2. Art of Perfume & Soap Making (Skill development and self employment) at Shri R.L.T. College of Science, Akola	National	8 th Sept. 2018
			3. My health my responsibility Shri R.L.T. College of Science, Akola	State	28 th Feb. 2019
			4. Seminar Competition on Topology at Shri R.L.T. College of Science, Akola	University	12th March, 2019
15	Physics	Mr. S.R. Jaiswal (3)	1. Art of Perfume & Soap Making (Skill development and self employment) at Shri R.L.T. College of Science, Akola.	National	8 th Sept. 2018
			2. My health my responsibility : at Shri R.L.T. College of Science, Akola	State	28 th Feb. 2019
			3. Seminar Competition on Topology at Shri R.L.T. College of Science, Akola.	University	12 Mar. 2019

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16	Mathematics	Dr.Ms. S.B. Tadam (1)	National Workshop on "Number Theory" at Shri Dr. R.G. Rathod Arts and Science College, Murtizapur Dist. Akola	National Level	19 th January 2019
17	Mathematics	Dr. S.L. Munde (1)	State Level Workshop on Soft Skills Training for Mathematical Sciences (Mathematical Practices Using ICT & Computational Tools). S.G.B.A.U. Amravati.	State level	15-16 March 2019
18	DPE	Dr. R.D. Chandrawanshi (3)	1. Art of Perfume & Soap Making (Skill development and self employment) at Shri R.L.T. College of Science, Akola.	National	8 th Sept. 2018
			2. My health my responsibility : at Shri R.L.T. College of Science, Akola	State	28 th Feb. 2019
			3. Seminar Competition on Topology at Shri R.L.T. College of Science, Akola	University	12 Mar. 2019

4. AVISHKAR (RESEARCH FESTIVAL) UNIVERSITY LEVEL PARTICIPATION

Sr. No.	Name of Student	Title of Project	Project Guide/ Supervisor	Date / Place
1	Ms. Kanchan Mangatani (PG-M.Sc.II, Micro)	A Study of Waste Management	Dr. H.S. Malpani	S.G.B. Amravati University, Amravati (26-27 Dec. 2018)
2	Ms. Shrutika Chandak (PG-M.Sc.II, Micro)	Production and optimization of Cynobacterial biofertilizer for saline belt of Vidarbha region		
3	Ms. Krashna Laddha (PG-M.Sc.II, Micro)	Production of plant growth promoter by using fermented extract of <i>Amaranthus spinosus</i> and Cow urine	Ms. S.N. Gawande	
4	Ms. Roshani Kadam (PG-M.Sc.I, Micro)	To Study antimicrobial efficacy of Pumpkin & its phytochemical activity against enteric pathogen		
5	Ms. Vasundhara N. Dutonde (UG-B.Sc.III)	Relative Study of Biodiesel Preparation From Virgin And Waste Vegetable Oil.	Dr. P.P. Deohate	

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6	Mr. Balraj B. Khurania (UG-B.Sc.III)	Assessment of Ground Water Quality of Some Village In Akola District For Irrigation.	Dr. P.P. Deohate	
7	Ms.Yoshita Veera (UG-B.Sc.III)	Dust control settler	Mr. S.R. Jaiswal	
8	Mr. Nagorao Fulkar (UG-B.Sc.III)	Spoil oil control mechanism model	Mr. P.P. Gedam	

5. AVISHKAR (RESEARCH FESTIVAL) STATE LEVEL PARTICIPATION

Sr. No.	Name of Student	Title of Project	Project Guide/ Supervisor	Date and Place
1	Ms. Kanchan Mangatani	A Study of Waste management	Dr. H.S. Malpani	Gondwana University, Gadchiroli. (15 To 18 Jan. 2018)
2	Ms. Vasundhara N. Dutonde	Relative Study of Biodiesel Preparation From Virgin And Waste Vegetable Oil.	Dr. P.P. Deohate	

6. Ph.D WORK (AWARD / REGISTRATION)

Sr. No.	Department	Name of Researcher	Title of Ph.D. Thesis	University	Project Guide/ Supervisor
1	Microbiology	Ms. Purnima Chitlange	Screening of bioactive compounds. Anti dermatophytic activity	S.G.B. Amravati University 29/9/2108	Dr. V.D. Nanoty
2	Chemistry	Ms. Ketki D. Bansod	Synthesis of Analogues of Polor Flavonoid of Isolated from Some Phyllanthus Plants And Studies of their Antioxidant Proprties.	S.G.B. Amravati University, Amravati 16/5/2019	Dr. P.P. Deohate
3	Chemistry	Ms. Kalpana A.Palaspagar (Ongoing)	Synthesis And Anti microbial Study of Some Novel Pyrimidine Linke Five And Six Membered Hetrocyclic System.	S.G.B. Amravati University, Amaravati.	Dr. P.P. Deohate
4	Mathematics	Ms. S.B. Tadam	Study of Uniform Continuous Spaces And Compactness Related Concept In Uniform Spaces And Proximity Spaces.	S.G.B. Amravati University, Amaravati.	Dr. S.M. Padhye
5	Mathematics	Ms. Priti P. Umarker	Study of Uniformizable Topological Spaces And Its Relation To Compactness in Uniform And Proximity Spaces.	S.G.B. Amravati University, Amaravati.	Dr. S.M. Padhye

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6	Mathematics	Ms. R.D. Nannaware	Properties of Spectral Operators on Different Linear Spaces	S.G.B. Amravati University, Amravati.	Dr. S.M. Padhye
7	Botany	Dr. P.M. Khadse	"Phytochemical Analysis and Anatomical Study of Some Unknown Medicinal Plants Used in Diabetes". Awarded on 17/07/2018	S.G.B. Amravati University, Amravati	Dr. V.R. Deshmukh

7. UNIVERSITY / STATE / NATIONAL LEVEL SEMINAR, WORKSHOP OR RESEARCH RELATED ACTIVITY CARRIED OUT BY DEPARTMENT.

Sr. No.	Department	Seminar, Workshop/ Research Related Activity	University / State/ National Level	Date
1.	Chemistry	National Level workshop Cum seminar on Art of Perfume & Soap making.	National Level	08.09.2018
2	Microbiology	State level Seminar on My Health My responsibility: complementary to medicine and Health care and Teachers workshop on Teaching constraints in Microbiology and Allied sciences.	State Level	28.02.2019
3.	Mathematics	University Level Seminar Competition for P.G. Students	University Level	12.03.2019

8. ORIENTATION/ REFRESHER AND SHORT TERM COURSE

Sr.	Name of Attendee	Name of the Courses	Place	Duration	Sponsoring Agency
1	Dr. H.S. Malpani	University and P.G. College M.Sc. Teachers Training Program in Biology/ Life Science Equivalent to Refresher Course	Centre of Excellence in Science and Mathematics education. Indian Institute of Sciences, Challakere Campus at Kudapura Chitradurga (Karnataka)	21 Days	Pandit Madan Mohan Malviya National Mission on Teachers and teaching, HRD, Govt. of India.
2	Dr. P.P. Deohate	Short Term Course in Environment Conservation	UGC-HRDC, S.G.B. Amravati University, Amravati.	09.10.2018 To 14.10.2018	UGC-HRDC New Delhi
3.	Dr. P.T. Agrawal	Short Term Course In Environment Conservation	UGC-HRDC, S.G.B. Amravati University, Amravati.	09.10.2018 To 14.10.2018	UGC-HRDC New Delhi
4.	Mr. S.C. Zyate	Orientation Programme	UGC-HRDC, Kumaun University Nainital, Uttarakhand.	01.03.2019 To 30.03.2019	UGC-HRDC New Delhi

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5.	Dr. K.M. Heda	Online Refresher Course Innovation and Best Practices	Swayam	40 Weeks Nov. 2018 to Mar.2019	UGC-HRDC
6	Dr. S.M. Nagrale	Short Term Course In Environment Conservation	UGC-HRDC, S.G.B. Amaravati University, Amravati.	09.10.2018 To 14.10.2018	UGC-HRDC New Delhi
7	Dr. A.S. Sawarkar	Short Term Course In Environment Conservation	UGC-HRDC, S.G.B.U. Amaravati University, Amravati.	09.10.2018 To 14.10.2018	UGC-HRDC New Delhi
8	Mr. P.P. Gedam	MOOC in "Solid State Physics"	IIT, Kharagpur	12 Week	Ministry of HRD, Govt. of India.
9	Dr. R.M. Agrawal	Train the Trainer Programme	Faculty Development Cell, Sant Gadge Baba Amravati University, Amravati	29 Oct.2018 to 3 rd Nov. 2018	SGB Amravati University
10	Mr. R.B. Ghayalkar	Online Refresher Course Biomedical Image Processing	Swayam	16 week	UGC-HRDC New Delhi
11	Mr. R.D. Chaudhari	Train the Trainer Programme	Faculty Development Cell, Sant Gadge Baba Amravati University, Amravati	29 Oct.2018 to 3 rd Nov. 2018	SGB Amravati University
		Online Refresher Course Innovation and Best Practices.	Swayam	40 Weeks Nov.2018 to Mar. 2019	UGC -HRDC
12	Dr. S.B. Tadam	5 th Refresher Course in Mathematics and Statistics (CORE) 2018-19	UGC-Human Resource Development Center Devi Ahilya Vishwavidyalaya, Indore	27 th July to 16 th August, 2018	UGC-Human Resource Development Center
13	Mrs. V.N. Badgujar	Refresher Course in Life Sciences	SGB Amaravati University, Amaravati	20/08/2018 to 12/08/2018	UGC-Human Resource Development Center
14	Dr. P.M. Khadse	Refresher Course in Life Sciences	Academic Staff College, HRDC, RTM Nagpur University, Nagpur	17/09/2018 to 07/10/2018	UGC-Human Resource Development Center

9. RESOURCE PERSON

Sr.	Department	Name of Resource Person	Key Note Address/ Invite Talk	Name of Institute/ Place	Date
1	Microbiology	Dr. V.D. Nanoty	Invited Talk	One Day National Conference on New Methodology of NAAC assessment to Nurture Quality enhancement in Higher educational Institution. Smt. L.R.T. College of Commerce, Akola	29 th Sept. 2018
			Invited Talk	Prerna State level Leadership Development program SGB Amravati University, Amravati	23 rd -27 th Feb. 2019
			Resource Person	State level seminar on Frontiers in Microbiology & Annual Microbiology's Meet 2018, At HPT Arts and RYK Science College, Nashik.	20-21 Oct. 2018
2	Chemistry	Dr. P.P. Deohate	Guest Lecture on Stereochemistry	Arts Commerce & Science College Arvi, Wardha	21.10.2018
3	Chemistry	Mr. V.D. Deotale	Guest Lecture on Constitution of India	Shri R.L.T. College of Science Akola	26.11.2018
			Guest Lecture on Constitution of India	Shri R.L.T. College of Science NSS Camp.	18.12.2018
4	Zoology	Dr. A.S. Sawarkar	Stapes for Successful Projects	EUREKA, one day work shop, Shri R.L.T.College of Science, Akola	13/03/2019
5	Physics	Dr. R.M. Agrawal	"Time Management"	Four Day Workshop on Skill Development Programme. Shri R.L.T. College of Science, Akola	22 nd March to 25 th March 2019
6	Physics	Mr. S.R. Jaiswal	Know Our Universe	EUREKA, one day work shop, Shri R.L.T. College of Science, Akola	13/03/2019
			'THE COSMOS'	Shri R.L.T. College of Science, NSS Camp at Apoti Khurd.	18/12/2018
7	Computer Science	Mr. R.B. Ghayalkar	Guest Lecture on Operating System For B.Sc.Forensics	Shri Shivaji College, Akola	20-03-2019

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8	Department of Sports & Physical Ed.	Dr. R.D. Chandrawanshi	Invited Talk	International Conference on Recent Trends in Commerce and Humanities Mahajan College of Technology & Smt. N.W. Arts College, Yavatmal	23 rd & 24 th March 2019
9	Mathematics	Dr. S.L. Munde	Invited Talk	UGC-Human Resource Development Center S.G.B.A.U. Amravati	14.12.18

10. RESEARCH AWARDS

Sr. No.	Department	Name of	Research Person	Name of Institute/ Awards	Date Place
1	Zoology	Dr. A.S. Sawarkar	Second Prize in Poster paper Presentation	International Conference on "Multifunctional Advanced Materials", at Kamla Nehru Mahavidyalaya & Dharampeth M.P. Deo Memorial Sci. College, Nagpur.	5-7 Oct. 2018
2	Zoology	Dr. R.P. Joshi Sawalkar	Third Prize in Oral Paper Presentation	National Conference on "Recent Trends in Life Sciences for Sustainable Development" at SGB Amravati University Amravati.	22-23 Jan. 2019

11. MoU OF DEPARTMENT

Sr. No.	Name of Department	Collaboration with (Institute/ organization)	Department / College	Duration
1	Computer Science	1. MICROSPECTRA SOFTWARE TECHNOLOGIES PVT. LTD 2. SPECTRAMIND WEB HOSTING SOLUTION PVT. LTD 3. VIBRANTMIND DIGITAL MARKETING SOLUTION PVT. LTD	College Level	09/04/2019 to 09/04/2024

Dr. Sushil M. Nagrale
Chairman
Research Committee

SHRI R.L.T. COLLEGE OF SCIENCE, AKOLA

TEACHING STAFF

1. Dr. V.D. Nanoty	Principal	13. Dr. P.M. Khadse	Assistant Professor (Botany)
2. Dr. U.K. Bhalekar	Associate Professor & HOD (Microbiology) Incharge (Biochemistry) Incharge (P.G.-Microbiology)	14. Dr. P. R. Kawle	Assistant Professor (Chemistry)
3. Prof. R.G. Chavan	Associate Professor & HOD (Electronics) Incharge (Computer & IT)	15. Dr. S.R. Kohchale	Assistant Professor (Zoology)
4. Dr. R.D. Chandrawanshi	Director, Physical Education	16. Dr. Sau. K.M. Heda	Assistant Professor (Chemistry)
5. Dr. S.M. Nagrale	Assistant Professor & HOD (Zoology) Incharge (Bioinformatics)	17. Dr. R.L. Rahatgaonkar	Assistant Professor (Zoology)
6. Dr. Sau. A.S. Sawarkar	Assistant Professor (Zoology)	18. Dr. Sau. A.A. Sangole	Assistant Professor (Botany)
7. Dr. P. P. Deohate	Assistant Professor (Chemistry)	19. Dr. A.G. Sarap	Assistant Professor (Chemistry)
8. Prof. Sau. V.N. Badgujar	Assistant Professor & HOD (Botany)	20. Prof. R.B. Ghayalkar	Assistant Professor (Computer Science)
9. Prof. R.D. Chaudhari	Assistant Professor (Electronics)	21. Prof. P.P. Gedam	Assistant Professor (Physics)
10. Dr. Ku. P.T. Agrawal	Assistant Professor & HOD (Chemistry) Incharge (PG-Chemistry)	22. Dr. H.S. Malpani	Assistant Professor (Microbiology)
11. Shri M.R. Ubale	Librarian	23. Prof. S.V. Madavi	Assistant Professor (Botany)
12. Dr. Ku. S.B. Tadam	Assistant Professor & HOD (Mathematics)	24. Dr. R.P. Joshi (Sawalkar)	Assistant Professor (Zoology)
		25. Dr. R.M. Agrawal	Assistant Professor (Physics)
		26. Dr. S.L. Munde	Assistant Professor (Maths)
		27. Prof. V.D. Deotale	Assistant Professor (Chemistry)
		28. Prof. Ku. S.N. Gawande	Assistant Professor (Micro.)
		29. Prof. A.B. Khedkar	Assistant Professor (English)
		30. Prof. S.C. Zyate	Assistant Professor (Chemistry)
		31. Prof. S.R. Jaiswal	Assistant Professor (Physics)

ADMINISTRATIVE STAFF

1. Dr. V.D. Nanoty	Principal
2. Shri K.Y. Patil	Stenographer (L.G.)
3. Shri S.G. Solanke	Lib./ Jr. Clerk
4. Shri P.S. Shegokar	Jr. Clerk
5. Shri V.S. Alane	Jr. Clerk
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7. Smt. S.S. Zatale	Peon
8. Shri S.V. Bhaltilak	Peon
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10. Shri C.V. Ahirkar	Peon
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12. Shri S.T. Khandare	Peon
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14.	Dr. R.D. Chandrawanshi	Member (Teaching Staff)
15.	Prof. Mrs. V.N. Badgujar	Member (Teaching Staff)
16.	Dr. R.L. Rahatgaonkar	IQAC Co-ordinator
17.	Shri Dipak J. Wankhade	Member (Non-Teaching Staff)
18.	Dr. V. D. Nanoty	Principal (Ex-Officio Secretary)

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09.	Shri Dilip Jain	Hon. Invitee Member
10.	Shri Shriharsh Kothari	Hon. Invitee Member
11.	Shri P.V. Gadge	Member (Teaching Staff)
12.	Shri V.S. Alane	Member (Non-Teaching Staff)
13.	Dr. V. D. Nanoty	Principal (Ex-Officio Secretary)



चित्रबिंब



Students selected for State Level Research Festival 'AVISHKAR-2019'



Felicitation of Dr. R.D. Chandrawanshi, Dr. P.T. Agrawal & Dr. P.R. Kawle for being recognized as Ph.D. Supervisor of S.G.B.A.U., Amravati



Mobile Photography Competition cum Exhibition organized by Dept. of Zoology



Poster Presentation Competition organized by Environmental Cell & Holy Basil Club, Dept. of Botany



Winners of 'Creative Writing Competition' organized by Dept. of Languages & Library



Akola District Bird Election Campaign by Students of Dept. of Zoology



Installation of Water Pots on occasion of 'Sparrow Day' by Dept. of Zoology



Tree Plantation by Environmental Cell



National Level Seminar cum Workshop on 'Art of Perfume and Soap Making' (Skill Development & Self Employment) organized by Department of Chemistry on 8th Sept. 2018.



State Level Seminar on 'My Health My Responsibility : Complimentary to Medicine & Health Care & Teachers Workshop on Teaching Constrains in Microbiology & Allied Sciences' organized by Department of Microbiology on 28th Feb. 2019.

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