

**SHRI. R.L.T. COLLEGE OF SCIENCE, AKOLA**  
**ZOOLOGY- QUESTION BANK**

**B.Sc. II (SEM III)**

**Session: 2021-22**

**Paper: Life and Diversity of Chordata and Concept of Evolution**

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**Unit-I**

**A) Long answer questions** ..... 12 marks each

- Q.1) Give an account on origin of chordates
- Q.2) Explains in detail digestive system in Amphioxus.
- Q.3) Describe the non-chordate and chordate affinities of Amphioxus
- Q.4) Discuss the affinities of Amphioxus towards Agnatha.
- Q.5) Describes the external characters of Scoliodon and add a note on lateral line organs.
- Q. 6) Describes in detail alimentary canal of Scoliodon.
- Q.7) Describe Venous system of Scoliodon.
- Q.8) Describe Arterial system of Scoliodon.
- Q.9) Give an account on migration in fishes

**B) Short answer questions** ..... 4 marks each

- a) Pharynx of Amphioxus
- b) Gill bars in Amphioxus.
- c) Mechanism of filter feeding in Amphioxus.
- d) Gonads of Amphioxus
- e) Excretory organs of Amphioxus
- f) External character of Scoliodon.
- g) Physiology of digestion in dogfish.
- h) Scroll valve in dogfish.
- i) Male reproductive system in Scoliodon.
- j) Female reproductive system in Scoliodon.
- k) Lateral line system in dogfish.
- l) Neuromast organ in Scoliodon.
- m) Causes and pattern of migration in fishes.

**Unit-II**

**A) Long answer questions** ..... 12 marks each

- Q.1) Describe the digestive system of frog.
- Q.2) Describe the respiratory system of frog.
- Q.3) Describe the external and internal structure of heart of frog.

- Q.4) Describe the internal structure and working of heart of frog  
 Q.5) Arterial system of *Rana trigrina*.  
 Q.6) Venous system of *Rana trigrina*  
 Q.7) Urinogenital system of *Rana trigrina*  
 Q.8) Describe the parental care in Amphibia.  
 Q.9) Describe the structure and working heart of Calotes versicolor.  
 Q.10) Describe Venous system of Calotes versicolor  
 Q.11) Describe Urinogenital of Calotes versicolor

**B) Short answer questions .....4 Marks each.**

- a) External character of frog.
- b) Bucco-pharyngeal respiration in frog.
- c) Pulmonary respiration in frog.
- d) Cutaneous respiration in frog.
- e) External structure of heart of frog.
- f) Arterial system of frog.
- g) Venous system of frog.
- h) External characters of Calotes versicolor
- i) Male reproductive system of Calotes versicolor.
- j) Female reproductive system of Calotes versicolor

**Unit -III**

**A) Long answer questions ..... 12 marks each**

- Q.1) Describe Migration in Birds.  
 Q.2) Describe silent features of prototheria  
 Q.3) Describe silent features of metatheria  
 Q.4) Describe Flight adaptations in birds.  
 Q.5) Explain morphology of Thyroid and Adrenal glands.  
 Q. 6) Enumerate in brief the general characters of birds.

**B) Short answer questions .....4 Marks each.**

- a) External characters of pigeon
- b) Well labelled diagram of respiratory system of pigeon.
- c) Syrinx of pigeon.
- d) Air sacs in pigeon
- e) Significance of Migration of bird
- f) Pituitary gland
- g) Thyroid gland
- h) Parathyroid gland
- i) Adrenal gland
- j) Islets of Langarhans

#### **Unit -IV**

A) Long answer questions ..... 12 marks each

Q.1) Define evolution. give a brief idea about its scope.

Q.2) Explain morphological and anatomical evidence of evolution with suitable examples.

Q.3) What do you understand about Homology and Analogy of organs? Explain this phenomenon with evidences from comparative anatomy.

Q.4) Give an account of evidences from physiology and biochemistry in support of biological evolution.

Q.5) Give an account of embryological evidences in support of organic evolution.

Q.6) Explain evidences from palaeontology in support of organic evolution.

B) Short answer questions .....4 Marks each.

a) Embryological evidences of evolution

b) Morphological evidences of evolution

c) Petrified fossils

d) Peripatus as a connecting link

e) Archaeopteryx as a connecting link

f) Anatomical evidences of evolution

g) Importance of fossil record

h) Radioactive carbon dating of fossils

i) Analogous organs

j) Homologous organs

k) Cast and Moulds

l) Trails and foot prints

m) Vestigial organs in animals

n) Conditions for fossilization

#### **Unit -V**

A) Long answer questions ..... 12 marks each

Q.1) Describe the theory of Inheritance of acquired characters.

Q.2) Give an account of Darwin's theory of natural selection.

Q.3) Explain modern concept of organic evolution i.e. Neo-Darwinism.

Q.4) What do you understand by speciation? describe the mode of speciation.

Q.5) Define population genetics. give an account of gene pool, genetic drift and gene frequency.

Q.6) State and explain Hardy -Weinberg's law. Mention its salient features.

Q.7) Define adaptive radiation. explain the phenomena with reference to coevolution, convergent, divergent and parallel evolution.

**B) Short answer questions .....4 Marks each.**

- a) Gene frequency
- b) Sympatric speciation
- c) Allopatric speciation
- d) Hardy Weinberg equilibrium
- e) Genetic drift
- f) Natural selection
- g) Convergent evolution
- h) Divergent evolution
- i) Parallel evolution
- j) Lamarckism
- k) Darwinism

**Unit -VI**

**A) Long answer questions ..... 12 marks each**

- Q.1) Define adaptive radiation. Explain the phenomena with reference to mammals.
- Q.2) Describe in detail the characteristics of modern highly evolved man.
- Q.3) Give an illustrated account of evolution of heart in vertebrates.
- Q.4) Explain evolution of aortic arches in vertebrates.
- Q.5) Explain evolution of excretory organs in vertebrates.
- Q.6) What is adaptation? explain aquatic adaptations in detail.
- Q.7) Explain desert adaptations of animal.

**B) Short answer questions .....4 Marks each.**

- a) Ramapithecus
- b) Dryopithecus
- c) Internal structure of mammalian heart
- d) Aortic arches in fishes
- e) Desert adaptation
- f) Aquatic adaptations
- g) Terrestrial adaptations
- h) Neanderthal man
- i) CroMagnon man
- j) Modern man



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