

Marks : 200

PAPER

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I

(Marks:100)

Course

Outline

INVERTEBRATE AND CHORDATE ZOOLOGY

Note: The candidates will be required to attempt five questions - three from Part - A and two from Part - B.

PART - A

Invertebrate

General organization (general morphology, mode of life adaptations life cycles and economic importance) of the following groups with special reference to the topics mentioned in each group

- **Protozoa:** Parasitism, conjugation and autogamy, medical importance.
- **Porifera:** Canal system, skeletal structures and their taxonomic value, position of porifera in the Animal Kingdom.
- **Coelenterata:** Polymorphism; mesenteries corals and coral reefs.
- **Platyhelminthes:** Parasitic adaptations, medical importance
- **Nematoda:** Medical importance.
- **Annelida:** Coelom, metamerism,
- **Mollusca:** Shell, modifications of foot, feeding, respiration, shell fishery,
- **Arthropoda:** Appendages, feeding: respiration, larvae.
- **Echinodermata:** Skeleton, water vascular system, larvae.

PART - B

Chordata

Origin; comparative account of skeleton, circulatory, excretory and nervous systems, development (egg types, cleavage, blastula and gastrula, germ layer/formation, embryonic membranes and placentation) natural history (mode of life, migration, adaptations, biting mechanism of snakes).

PAPER

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II (Marks:

100)

GENERAL ZOOLOGY

The candidates will be required to attempt at least one question from each part.

Part

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A

Cell Biology: Morphology. Chemical composition and functions of nucleus, nuclear inclusions and cytoplasmic organelles, protein synthesis and molecular genetics. mechanism of mitosis and meiosis.

Part

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B

General Physiology: Respiration, respiratory mechanism, respiratory pigments, transport of oxygen and carbon dioxide, circulation : haemodynamics, control of cardiovascular system, nutrition: modes of nutrition, digestion and assimilation of food stuff, Excretion: nature and sources of substances excreted, modes of excretions, Nervous system, nerve impulses, Hormones and their biological action.

Part

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C

Genetics: Mendelian principles, multiple alleles, interaction of genes: linkage and crossing over, mapping of genes, sex determination and sex linkage, mutations, chromosomal aberrations, gene concept.

Part

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D

Evolution: Origin of life, organic diversity, theories to account for organic diversity, Phylogeny and ontogeny, species concept, mechanism of evolution, modern concept of natural selection, evolutionary trends.

Part

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E

Ecology: Concept of ecosystem, biogeochemical cycles, animal adaptations to major habitats, environmental pollution and its effect on life.

Suggested Readings

- | Title | Author |
|--|--------------------|
| 1. A Text Book of Zoology (Invertebrate) | Parker and Haswell |
| 2. Comparative Anatomy of the | George C.kent |

- vertebrates
3. Invertebrate Zoology Hegner and Engemann
 4. Cell structure and Loewy and Siekevitz
Function (Eighth)
 5. Cell and Molecular De-
Biology (Eighth Edition) Robertis. E.O.D. & De-
Robertis. E.M.F.
 6. Fundamentals of Ecology Odum
 7. Principles of Genetics Strickberger
 8. Introduction to Evolution Moody
 9. Modern Genetics Ayala. F.J. and
Kiger. J.A. Jr.
 10. Text Book of Medical Guyot. W.B
Physiology
 11. Molecular Biology of Gene Watson. J.D.