

ZOOLOGY (Subsidiary)**Paper I****Time - 3 hours****Full Marks - 75**

Twelve questions are to be set. Students will be required to answer any five questions, at least **two** from each group.

Group A**Non-Chordata**

Bionomics : General characters and classification (upto orders) of the following phyla :-

Porifera, Coelenterata, Platyhelminthes, Aschelminthes, Annelida, Mollusca, Echinodermata and Hemichordata

Detailed study of the structure and life history of the following types

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|-----|-----------------|---|---|
| 1. | Protozoa | - | <i>Paramecium</i> |
| 2. | Porifera | - | <i>Sycon</i> |
| 3. | Cnidaria | - | <i>Obelia</i> |
| 4. | Platyhelminthes | - | <i>Fasciola</i> |
| 5. | Aschelminthes | - | <i>Ascaris lumbricoides</i> |
| 6. | Annelida | - | <i>Pheretima posthuma</i> |
| 7. | Arthropoda | - | <i>Palaemon</i> |
| 8. | Mollusca | - | <i>Pila</i> |
| 9. | Echinodermata | - | <i>Asterias</i> |
| 10. | Hemichordata | - | Salient features of <i>Balanoglossus</i> and its affinities |

Group B**Cell-Biology, Genetics and Evolution**

1. Gametogenesis, Fertilization & Parthenogenesis
2. Cell-Biology and Genetics : Ultra-structure and functions of the following cell organelles :-
Plasma membrane, Endoplasmic reticulum, Mitochondria, Golgi bodies, Ribosomes, Chromosomes, Lysosome.
3. Structure and functions of DNA.
4. Gene Mutation.
5. Linkage and crossing-over.

Evolution

1. Lamarckism and Neo-Lamarckism.
2. Darwin's theory of natural selection and Neo-darwinism.
3. Isolating mechanism and its role in evolution.

ZOOLOGY (SUBSIDIARY)

Practical

Time - 3 hours

Full Marks - 25

1. Dissection 1×7= 7 marks
 - a. *Pheretima* - Alimentary canal, Reproductive, Excretory and Nervous system
 - b. *Palaemon* - Alimentary canal, Nervous system
 - c. *Pila* - Alimentary canal, Nervous system
2. Permanent stained Preparation of the following 1×4= 4 marks
 Septal nephridia, Ovary, Setae of *Pheretima*, Statocyst of Prawn, Radula and Osphradium of *Pila*
3. Spotting 1×6 = 6 marks
 - a. Museum Specimens 2
 - b. Slides 3
 - c. Evolution 1
4. Cytology 4 marks
 - a. Squash preparation to show the stages of Mitosis (onion root tips) and Meiosis (Grasshopper testes)

or

Giant Chromosomes of *Chironomous* larvae
5. Practical Records 4 marks