

15
ZOOLOGY (GENERAL)
Paper II

Time - 3 hours

Full Marks - 75

Five questions are to be set from each group. Students shall answer any five questions in all, attempting not more than three from each group.

Group A
Chordata

1. **Bionomics : General characters and classification (upto orders only) of living Chordates of the following groups :-**
Protochordata, Cyclostomata, Pisces, Amphibia, Reptilia, Aves and Mammalia.
2. **Study of the following :-**
 - i. Urochordata-*Herdmania* (including Retrogressive metamorphosis)
 - ii. Cephalochordata - *Amphioxus*
 - iii. Pisces - *Scolodon* - Type study : differences with that of a Bony fish.
 - iv. Reptilia - Biting and feeding mechanism of snakes.
 - v. Aves -*Columba* :
Flight adaptations, Elementary idea of bird migration and Bird Sanctuaries in India.
 - vi. Mammalia - Characters, distribution and affinity of Prototheria and Metatheria.
3. **Comparative study of the following in Vertebrates :**
Integument, Heart, Aortic arches and Brain.

Group B

1. **Embryology :**
 - i. Types of vertebrate eggs and their early cleavage.
 - ii. Development of *Amphioxus* (upto the formation of coelom) and Chick (upto 3 germinal layers)
 - iii. Placenta in Mammals - Its development, types and functions.
2. **Biochemistry, Physiology and Endocrinology :**
 - i. Structure and classification of Proteins, Carbohydrates & Fats
 - ii. Physiology of Digestion, Excretion & Respiration in Mammals.

Books Recommended

1. Modern Text Book of Vertebrates *By R. L. Kotpal*
2. Chordate Zoology and Animal Physiology *by E. L. Jordan and P. S. Verma*
3. Chordate Embryology *by Verma, Agarwal and Tyagi*
4. A Text Book of Animal Physiology *by Goel and Shastri*
5. A Text Book of Animal Physiology *by A. K. Berry*
6. Human Physiology Vol. II *by Chatterjee*

ZOOLOGY (GENERAL)**Practical****Time - 3 hours****Full Marks - 25****1. Dissection**

1×7=7 marks

Scoliodon - Afferent and efferent branchial arteries, Cranial nerves (V and VII) and (IX and X), Internal ear, Eye muscles and their nerves supply, Urinogenital system.

Columba - Flight muscles, Arterial and Venous systems.

2. Mounting (Permanent stained preparation) 1×4=4 marks

Scales of fishes, Pecten and Filoplume feather of birds, Ampulla of Lorenziini.

3. Spotting

1×6=6 marks

Museum Specimen 1 mark

Bones 3 marks

(Limb, Girdle, Skull, Vertebrae of Varanus and Fowl)

Slides 2 marks

4. Endocrinology and Embryology 2×2=4 marks

i. Identification of permanent slides of the various developmental stages of Frog and Chick.

ii. Identification and comment upon the histological structure of various Endocrine glands.

5. Practical Records

4 marks