

**Zoology**  
**B.Sc. Part I 2018-19**  
**Paper I**  
**(Cell Biology and Non-chordata)**

**Unit: I**

1. The cell (Prokaryotic and Eukaryotic)
2. Organization of Cell: Extra-nuclear and nuclear (Plasma membrane, Mitochondria, Endoplasmic reticulum, Golgi body, Ribosome and Lysosome).
3. Nucleus, Chromosomes, DNA and RNA

**Unit: II**

1. Cell division (Mitosis and Meiosis).
2. An elementary idea of Cancer cells And Cell transformation.
3. An elementary idea of Immunity: Innate & Acquired Immunity, Lymphoid organs, Cells of Immune System, Antigen, antibody and their interactions

**Unit: III**

1. General characters and classification of Phylum Protozoa, Porifera, and Coelenterata up to order.
2. Protozoa: Type study - Paramecium,
2. Porifera: Type study - Sycon.
3. Coelenterata: Type study - Obelia

**Unit: IV**

1. General characters and classification of Phylum Platyhelminthes, Nematelminthes, Annelida and Arthropoda up to order.
2. Platyhelminthes and Nematelminthes: Type Study – Fasciola, Ascaris
3. Annelida: Type Study - Pheretima.
4. Arthropoda: Type Study - Palaemone.

**Unit: V**

1. General characters and classification of Phylum Mollusca and Echinodermata up to order.
2. Mollusca: Type Study - Pila.
3. Echinodermata- Type Study- Asterias (Starfish).

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**Paper II**  
**(Chordata and Embryology)**

**Unit-I**

1. Classification of Hemichordata
2. Hemichordata- Type study-Balanoglossus
3. Classification of Chordates upto orders..
4. Protochordata-Type study - Amphioxus.
5. A comparative account of Petromyzon and Myxine.

**Unit-II**

1. Fishes-Skin & Scales, migration in fishes, Parental care in fish.
2. Amphibia-Parental care and Neoteny.
3. Reptilia- Poisonous & Non-poisonous Snakes, Poison apparatus, snake venom and Extinct Reptiles

**Unit-III**

1. Birds- Flight- Adaptation, Migration, and Perching mechanism, Discuss-Birds are glorified reptiles.
2. Mammals-Comparative account of Prototheria, Metatheria, Eutheria and Affinities.
3. Aquatic Mammals and their adaptations.

**Unit:IV**

1. Fertilization
2. Gametogenesis, Structure of gamete and Types of eggs
3. Cleavage
4. Development of Frog up to formation of three germ layers.
5. Parthenogenesis

**Unit:V**

1. Embryonic induction, Differentiation and Regeneration.
2. Development of Chick (a) up to formation of three germ layers, (2) Extra-embryonic membranes.
3. Placenta in mammals.

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**Practical**

The practical work will, in general be based on the syllabus prescribed in theory and the candidates will be required to show knowledge of the following:

- Dissection of Earthworm, Cockroach, Palaemon and Pila
- Minor dissection—appendages of Prawn & hastate plate, mouth parts of insects, radulla of Pila.

(Alternative methods: By Clay/Thermacol/drawing/Model etc.)

Adaptive characters of Aquatic, terrestrial, aerial and desert animals.

- Slides- Invertebrates, frog embryology, Chick embryology and cytology,

**Scheme of Practical Exam**

**Time: 3hrs**

1. Major Dissection	10 Marks
2. Minor Dissection	05 Marks
3. Comments on Exercise based on Adaptation	04 Marks
4. Cytological Preparation	05 Marks
5. Spots-8. (Slides-4, Specimens-4)	16 Marks
6. Sessional	10 Marks