[This question paper contains 4 printed pages.]

20

Your Roll No. 2022

Sr. No. of Question Paper : 743

B

Unique Paper Code : 32231201

Name of the Paper : Non Chordata II – Coelomates

Name of the Course : **B.Sc. (H) Zoology**

Semester : II

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **five** questions in all.
3. Including Question No. **1** which is compulsory.

1. (a) Define the following terms : (1×4=4)

   (i) Deuterostomes

   (ii) Ecdysis

   (iii) Detorsion

   (iv) Metamerism

P.T.O.

(b) Differentiate between the following pairs : (2×4=8)

(i) Polychaeta and Oligochaeta

(ii) Atoky and Epitoky

(iii) Enterocoely and Schizocoely

(iv) Ctenidia and Taenidia

(c) Name the exact location and function of the following : (1×4=4)

(i) Radula

(ii) Tiedemann's body

(iii) Gnathobase

(iv) Respiratory tree

(d) Classify the following upto class and write their scientific name. (2×3=6)

(i) Cake urchin

(ii) Cuttlefish

(iii) Horseshoe crab

(e) Match the following : (1×5=5)

(i) Spider	(a) Aristotle's lantern
(ii) Octopus	(b) Chelicera
(iii) Leech	(c) Mandible
(iv) Sea urchin	(d) Radula
(v) Cockroach	(e) Jaw

2. (a) Give a brief account of larval forms of Echinodermata with diagrams. (7)

(b) Explain the mechanism of torsion in Gastropoda. (5)

3. (a) Give the structure of compound eye and explain its functioning with diagrams. (7)

(b) Briefly discuss the defence mechanisms existing among echinoderms. (5)

4. (a) Give a brief account of respiratory organs in Arthropods and discuss the mechanisms of respiration in insects. (7)

P.T.O.

(b) Discuss the Pulmonary respiration in Mollusca. (5)

5. Give a detailed description of excretion in Annelida with diagrams. (12)

6. Write short notes on any **three** of the following : (3×4=12)

(i) Affinities of Onychophora.

(ii) Hormonal control of metamorphosis in insects.

(iii) Pearl formation.

(iv) Copulation and cocoon formation in leech.

[This question paper contains 4 printed pages.]

21 Your Roll No. 2022

Sr. No. of Question Paper : 761 **B**

Unique Paper Code : 32231202

Name of the Paper : Cell Biology

Name of the Course : **B.Sc. (Hons.) Zoology**

Semester : II (CBCS-LOCF)

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **Five** questions in all.
3. Question No. **1** is compulsory.
4. Give neat labeled diagrams wherever necessary.

1. (a) Define the following : (6)

(i) Prion

(ii) Mycoplasma

(iii) Glycocalyx

P.T.O.

(iv) Cajal bodies

(v) Kinetochore

(vi) Restriction point

(b) Differentiate between the following : (10)

(i) Virus and Viroids

(ii) Heterochromatin and Euchromatin

(iii) Prokaryotic cell and Eukaryotic cell

(iv) Exocytosis and Endocytosis

(v) COP I and COP II

(vi) Apoptosis and necrosis

(c) Expand the following : (5)

(i) MTOC

(ii) FADD

(iii) Cdk

(iv) SRP

(v) NOR

(d) Give the contribution of the following scientists: (3)

(i) Sabatini and Blobel

(ii) Rudolf Virchow

(iii) Earl W. Sutherland

(e) Give the function of the following : (3)

(i) p53

(ii) Kinetochore

(iii) Colchicine

2. (a) Describe the various polymorphic forms of Lysosomes and add a note on the role of Lysosome in organ regression. (6)

(b) What is Oxidative phosphorylation? Explain the mechanism of generation of ATP in mitochondria. (6)

3. (a) Describe the fluid mosaic model of plasma membrane. Explain the various transport mechanisms across the membrane. (8)

(b) Write about various functions of SER. (4)

P.T.O.

4. (a) Give an account of the assembly and functions of microtubules. (5)

(b) What is cell signaling? Explain the mechanism of signal transduction through G-protein coupled receptors. (7)

5. Describe important molecular events of different stages of cell-cycle and discuss the role of cyclins, Cdks and checkpoints in regulation of cell cycle. (12)

6. (a) Explain the secretory pathway of endomembrane system in cell. (8)

(b) Justify that Mitochondria is a semiautonomous organelle. (4)

7. Write short notes on any **three** of the following: (4×3=12)

(i) Nucleo-cytoplasmic exchange

(ii) Clathrin coated pits

(iii) Chromatin Packaging

(iv) Peroxisome

(v) Cell junctions