

(14)

20/5/18

10/5

Roll No.....

Set A

S.No. of Question Paper : 5836
 Unique Paper Code : 223201
 Name of the Paper : Biodiversity - II (Chordata-I)
 Name of the Course : B.Sc (H) Zoology
 Semester : II
 Duration : 3 hours
 Maximum Marks : 75 marks

H

Instructions for Candidates: (Write your Roll no. on the top immediately on receipt of this paper)

Attempt *Five* questions in all and question No. 1 is compulsory
 Make well labeled diagrams wherever necessary

1.

a. Define : (1x4=4)

- i. Antlers
- ii. Synovial joint
- iii. Portal system
- iv. Pseudobranch

b. Differentiate between the following pairs of terms. (2x4=8)

- i. Mullerian & Wolffian duct
- ii. Physostomous & Physoclistus swim bladder
- iii. Single & Double circulation
- iv. Larynx & Syrinx

c. Give location and function of the following : (2x4=8)

- i. Foramen ovale
- ii. Red gland
- iii. Gill raker
- iv. Iter

d. Fill in the blanks: (1x4=4)

- i. Mammary glands are modified _____ glands.
- ii. In rabbits, diastema is a toothless space between _____ & _____.
- iii. Members of _____ family exhibit true horns.

Give the scientific name of the following and
 e. Classify up to order: Write genus also. (1.5x2=3)

- i. Electric ray
- ii. Mud puppy

2.

- a. Give a brief account of parental care in Amphibia. (6)
- b. Discuss retrogressive metamorphosis in Urochordates. (6)

3.

- a. Describe the structure of a typical tooth and various types of teeth found in vertebrates. (6)
- b. Describe the different functions of integument. (6)

↳ Explain

4. Describe different types of migration in fishes (12)

5.

- a. Discuss the adaptations of flight in birds. (9) 12
- b. Describe the three basic types of feathers. (3)

↳ types of feathers and

6. Write an essay on origin and evolution of terrestrial ectotherms. (12)

↳ Give a detailed account of the

7. Write short notes on any *three* of the following : (4x3=12)

- i. Ruminant stomach
- ii. Jaw suspension
- iii. Functions of swim bladder
- iv. Birds are glorified reptiles

↳ as

15

This question paper contains 3 printed pages.

Your Roll No. 2018

Sl. No. of Ques. Paper : 6740

HC

Unique Paper Code : 32231201

Name of Paper : Non-Chordata-II— Coelomates

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

Semester : II

Duration : 3 hours

Maximum Marks : 75

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

Attempt five questions in all.

Question No. 1 is compulsory.

Attempt all parts of a question in one place.

1. (a) Define the following terms:

(i) Epitoky

(ii) Sclerotization

(iii) Enterocoel

(iv) Cephalization. 4

(b) State whether true or false:

(i) Annelids have an open blood vascular system.

(ii) The body cavity of molluscs is a haemocoel.

(iii) Arachnids do not possess antennae.

(iv) All echinoderms are motile. 2

P. T. O.

- (c) Differentiate between the following terms:
- Uniramous and Biramous appendages
 - Ophiopluteus and Echinopluteus larva
 - Ctenidia and Taenidia
 - Ocellus and Ommatidium. 8
- (d) Give the scientific names of the following and classify upto class. Write the identifying features of their phylum.
- Sea lemon
 - Clam worm
 - Root headed barnacle
 - Sea urchin. 8
- (e) Give the location and any *one* function of the following:
- Pedicellaria
 - Statocyst
 - Osphradia
 - Parapodia
 - Hectocotylized arm. 5
2. (a) Explain the evolutionary significance of Trochophore larva. 3
- (b) Describe the structure of gills in Gastropods and discuss the mechanism of respiration in them. 9

3. Give a detailed account of excretion in the phylum Annelida giving suitable diagrams. 12
4. Define Eusociality. What are the prerequisites of a social organisation? Discuss social life in termites. 12
5. (a) Define metamorphosis. Discuss metamorphosis in insects giving suitable examples and add a note on its hormonal control. 8
- (b) Discuss the affinities of phylum Onychophora. 4
6. (a) Describe the structure of the water vascular system in starfish with the help of diagrams. 8
- (b) Explain the process of pearl formation in bivalves. 4
7. Write short notes on any *three*:
- Metamerism
 - Image formation by compound eyes
 - Affinities of echinoderms with Chordates
 - General characters of phylum Annelida
 - Evolution of coelom. 4,4,4

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This question paper contains 4 printed pages.

Your Roll No. 22/5/18

Sl. No. of Ques. Paper : 6741

HC

Unique Paper Code : 32231202

Name of Paper : Cell Biology

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

Semester : II

Duration : 3 hours

Maximum Marks : 75

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

*Attempt five questions in all.
Question No. 1 is compulsory.*

1. (a) Define:

- (i) Viroid
- (ii) Lamins
- (iii) Aquaporins
- (iv) Glycocalyx.

1×4

(b) Differentiate between the following pairs:

- (i) Microfilaments and Microtubules
- (ii) Tight and Gap junctions
- (iii) Passive and Facilitated diffusion
- (iv) Peripheral and Integral proteins.

2×4

(c) Write exact location and functions of the following:

P. T. O.

- (i) MCM proteins
 (ii) Cadherins
 (iii) TOM proteins
 (iv) Centrosome. 1×4
- (d) State the contributions of:
 (i) Gorter and Grendel
 (ii) Benda
 (iii) Christian de Duve
 (iv) Camillo Golgi. 1×4
- (e) Fill in the blanks:
 (i) organelle is also referred to as suicidal bag.
 (ii) Peripheral proteins are attached on to the membrane by interactions.
 (iii) is an intracellular protein that binds calcium and activates enzymes.
 (iv) GPI anchored proteins can be released from the membrane by the enzyme 1×4
- (f) Expand the following:
 (i) MTOC
 (ii) GERL
 (iii) ABC. 1×3=3

2. (a) Why is Golgi apparatus termed as the "Post Office of the Cell"? Discuss with suitable diagram. 6
 (b) Explain with diagram the events that regulate M-phase of the cell cycle. 6
3. Write an account on the components and functions of mitochondrial respiratory chain. Add a note on its semiautonomous nature. 12
4. (a) Give an account on the packaging of chromosomal DNA in eukaryotic cell. 8
 (b) Nucleolus is called the "Factory for RNA Biogenesis". Justify. 4
5. (a) What is cell signal cascade? Explain through GPCR pathway with Ca^{2+} as secondary messenger. 8
 (b) Explain the assembly of microtubules and their role in cellular mobility. 4
6. (a) Discuss the various models of plasma membrane. 6
 (b) Explain diagrammatically the process of receptor-mediated endocytosis. 6
7. Write short notes on any *three*:
 (a) Synaptonemal Complex P. T. O.

- (b) Peroxisomes
- (c) Functions of Golgi complex
- (d) Regulation of Cell cycle.