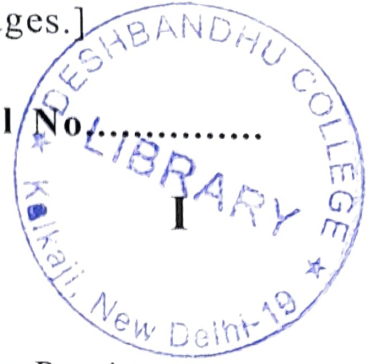


09/01/25

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Your Roll No.



Sr. No. of Question Paper : 1368

Unique Paper Code : 2232011101

Name of the Paper : Non Chordata-Protista to
Pseudocoelomates (DSC-1)

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

Semester : I

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **four** questions including Question No. 1 which is compulsory.
3. Draw well-labelled diagrams wherever necessary.

1. (i) Define the following terms (**any four**) : (4)

- (a) Mehlis gland
- (b) Bilateral Symmetry
- (c) Plasmotomy
- (d) Ootype
- (e) Kinty

P.T.O.

(ii) Differentiate between the following pairs
(any two) : (4)

(a) Schizogony and Sporogony

(b) Primary host and Secondary host

(c) Cnidoblast and Trichocyst

(iii) Match the Columns: (4)

(a) Pinacocytes 1) *Hydra*

(b) Amphids 2) *Ctenoplana*

(c) Comb Plates 3) Sponges

(d) Gastrovascular cavity 4) Nematoda

(iv) Give the exact location and one function of each
of the following (any three) : (3)

(a) Pyrenoids

(b) Acetabulum

(c) Colloblast cells

(d) Pneumatophore

2. (a) Give the illustrated account of life history of malarial parasite in man. (9)
- (b) Describe the process of conjugation in *Paramecium* and discuss its significance. (6)
3. (a) Give the general characteristics of Phylum Porifera. (5)
- (b) Give an account of different types of canal systems in Porifera and give its significance. (10)
4. (a) Describe Polymorphism in Cnidaria. Comment upon its significance. (9)
- (b) Give an outline classification of phylum Cnidaria with characters and examples of each class. (6)
5. (a) Give a detailed account of parasitic adaptations in Helminthes. (10)
- (b) Give graphic life cycle of *Taenia solium*. (5)

6. Write short notes on any **three** of the following : (15)
- (a) Course of migration of *Ascaris* larva within its host body.
 - (b) Metagenesis.
 - (c) Asexual reproduction in protozoa.
 - (d) Compare and contrast flatworms with roundworms.

13/01/25
[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1387

Unique Paper Code : 2232011102

Name of the Paper : Biology of Cell : Structure
& Function

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

Semester : I (NEP-UGCF-2022)

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

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

1. (a) Give the function of the following : (1×5=5)

- (i) Plasmodesmata
- (ii) Flippase
- (iii) Lamins
- (iv) Liposomes
- (v) Aquaporins

P.T.O.

(b) Give the contribution of **ANY FIVE** of the following scientists : (1×5=5)

- (i) Benda
- (ii) Peter Mitchell
- (iii) Blobel & Sabatini
- (iv) Christian de duve
- (v) Tim Hunt, Paul Nurse, Lee Hartwell
- (vi) Lynn Margulis

(c) Expand **ANY FIVE** of the following : (1×5=5)

- (i) GPCR
- (ii) MTOC
- (iii) GERL
- (iv) CFTR
- (v) cAMP
- (vi) ATP

2. Distinguish between **ANY FIVE** of the following :

(a) Microfilaments and Microtubules

(b) Mitosis and Meiosis

(c) Integral and Peripheral Proteins

(d) Euchromatin and Heterochromatin

(e) Tight junctions and Gap junctions

(f) Dyneins and Kinesins (1×5=5)

3. With appropriate examples and well-labelled diagrams elaborate the ways in which molecules are passively and actively transported across the plasma membrane. (15)

OR

What is oxidative phosphorylation? Describe how the Electron Transport Chain and ATP Synthase in the mitochondria help generate ATP-the energy currency of the cell. (15)

4. (a) Illustrate the process of microtubule assembly with the help of suitable diagram. Add a note on their role in cellular mobility. (7+3=10)

- (b) Discuss the role of secondary messengers in cell signaling. (5)
5. (a) What is Signal Hypothesis? How does vesicular transport take place from ER to Golgi apparatus? (5+5=10)
- (b) Which organelle in the cell is also called the "Suicidal Bag". Enumerate its functions. (5)
6. Write short notes on **ANY THREE** of the following : (5×3=15)
- (a) Receptor-mediated endocytosis
 - (b) Endosymbiotic Hypothesis
 - (c) Cell Cycle checkpoints
 - (d) Protein modifications in ER
 - (e) Nuclear Pore Complex

15/01/25 ✓
[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1406

Unique Paper Code : 2232011103

Name of the Paper : DSC-3, Concepts of Ecology

Name of the Course : B.Sc. (Hon) Zoology

Semester : I, NEP-UGCF 2022

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **four** questions including.
3. Question No. 1 which is compulsory.
4. Draw well-labeled diagrams wherever necessary.

1. (a) Define the following : (4)

(i) Migration

(ii) Natality

P.T.O.

(iii) Fecundity

(iv) Sere

(b) Distinguish between the following : (6)

(i) Autecology and Synecology

(ii) Unitary and Modular population

(iii) Fundamental and Realized niche

(c) Name the scientists associated with the following terms : (3)

(i) Ecology

(ii) Hypervolume niche

(iii) Ecosystem

(d) State whether the following statements are True or False : (2)

(i) Maximum theoretical production of new individuals under ideal conditions is known as exponential growth.

(ii) Human population shows concave type of survivorship curve.

(iii) Complete competitors can coexist.

(iv) Commensalism describes a relationship between organisms where one benefits and the other is harmed.

2. (a) Describe various density-dependent factors that regulate the population size near carrying capacity level. (9)
- (b) What are life tables? Add a note on their significance. (3)
- (c) Illustrate the sigmoid growth curve with the help of well-labeled diagram. (3)
3. (a) Describe Lotka-Volterra model for predator and prey interaction with the help of diagrams and equations. (8)
- (b) Explain Shelford's law of tolerance. (3)
- (c) Describe various types of ecological pyramids. (4)
4. (a) Define biogeochemical cycles. (1)

- (b) Explain Nitrogen cycle with the help of diagram.
Explain the role of microorganisms in Nitrogen cycle. (9)
- (c) Explain ecotone and edge effect. Why is ecotone considered as zone of stress? (5)
5. (a) Explain different energy flow models in an ecosystem. (8)
- (b) Define ecological succession. Explain the various theories of climax in succession. (5)
- (c) Differentiate between pioneer and climax community. (2)
6. Write short notes on any **three** of the following :
- (a) Protected areas
- (b) Gause's principle
- (c) Light as a limiting factor
- (d) Ecological efficiencies
- (e) Resource partitioning (3×5)