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(4)

Your Roll No. 2023

No. of Question Paper : 1032

D

Unique Paper Code : 2232011101

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

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

Semester : I

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

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

Attempt **any four** questions including **Question
No. 1** which is compulsory.

Draw well-labelled diagrams wherever necessary.

P.T.O.

1. (i) Define the following terms (**any four**): (4)
- (a) Eutely
 - (b) Polyembryony
 - (c) Cyclosis
 - (d) Metaboly
 - (e) Apolysis
- (ii) Differentiate between the following pairs (**any two**): (4)
- (a) Trophocytes and Thesocytes
 - (b) Definitive host and Intermediate host
 - (c) Gonozooid and Gastrozooid
- (iii) State whether following statements are true or false: (4)
- (a) Malarial parasite is a digenetic organism.
 - (b) The totipotent cells of sponges are the archeocytes.

(c) Siphonophore cnidarians exhibit polymorphism.

(d) *Taenia solium* has a well-developed digestive system.

(iv) Give generic names of the following and classify up to class (**any three**): (3)

(a) Glass rope sponge

(b) Slipper animalcule

(c) Organ pipe coral

(d) Jelly fish

2. (a) Mention the types of locomotor organelles in Protozoa. Explain briefly how they bring about locomotion.

(b) Describe the various modes of asexual reproduction in Protozoa. (9+6)

3. What are coral reefs? Write all you know about coral formation mentioning clearly various forms of coral reefs met with all over the world. (15)

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4. (a) Give a detailed account of the criteria on the basis of which Non-Chordates have been classified.
- (b) Give general characteristics of phylum Ctenophora.

(10+5)

5. (a) Describe the life cycle of *Ascaris lumbricoides* with the help of labelled diagrams.

- (b) Give its physiological adaptations towards parasitic mode of life.

(10+5)

6. Write short notes on any three of the following:

(15)

(a) Polymorphism in Hydrozoa

(b) Structure and function of types of cells in sponges

(c) Syconoid canal system

(d) Sporogony

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Your Roll No. 2023

Sr. No. of Question Paper : 1051

D

Unique Paper Code : 2232011102

Name of the Paper : DSC-2 Biology of Cell:
Structure and function

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

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. Answer **FOUR** questions in all.
3. **Question No. 1** is compulsory

1. (a) Define:

(1×3=3)

(i) Lipid rafts

(ii) Lamins

P.T.O.

(iii) Microfilaments

(b) Write exact location and function of the following
(any three): (1×3=3)

(i) Mannose-6-phosphate

(ii) Cytochrome p450

(iii) SDH

(iv) Hydrolases

(c) State the contributions of (any three): (1×3=3)

(i) Hugh Davson and James Danielli

(ii) Camillo Golgi

(iii) David Sabatini and Gunter Blobel

(iv) Christian de Duve

(d) Fill in the blanks: (1×4=4)

(i) Ion channels that open in response to binding of neurotransmitters or other signalling molecules are called _____.

(ii) _____ organelle is also referred to as dictyosome.

(iii) Chromosome is maximally condensed at _____ stage.

(iv) _____ ions are used to generate one molecule ATP in mitochondria.

(e) Expand the following: (1x2)

(i) SRP

(ii) MPF

2. (a) Describe the operation of Na^+ - K^+ pump with the help of suitable diagram. (6)

(b) Explain the various modifications that proteins undergo in the lumen of ER. (7)

(c) Why are Lysosomes called "Suicidal bags"? (2)

3. (a) How are cells organized into tissues? Explain the various types of "Cell-to-Cell interactions". (8)

(b) Discuss how peroxisomes are involved in detoxification process. (4)

(c) Explain Endosymbiotic theory.

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(3)

4. (a) Give an account of the components of Electron Transport Chain and its role in cellular respiration.
(7)

(b) Explain the structure of nuclear pore complex with well labelled diagram.
(4)

(c) Why Nucleolus are called RNA factory, explain how various ribosomes are organized with well labelled diagram?
(4)

5 (a) Explain cell cycle and discuss its molecular regulation through check points.
(12)

(b) Elucidate the role of cAMP as second messenger.
(3)

6. (a) Explain treadmilling in microfilaments. How are microfilaments arranged in microvilli?
(8)

(b) What are the various models of plasma membrane?
(7)

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Your Roll No. 2023

Sr. No. of Question Paper : 1072

D

Unique Paper Code : 2232011103

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

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

Semester : I UGCF

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 **four** questions in all.
3. **Question no. 1** is compulsory.

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

(i) Guilds

P.T.O.

(ii) Ecosystem

(iii) Ecological efficiency

(iv) Keystone species

(b) Distinguish between the following: (6)

(i) Grazing and detritus food chain

(ii) Amensalism and Commensalism

(iii) Autogenic and Allogenic succession

(c) Fill in the blanks: (2)

(a) _____ is a type of biological interaction where one species causes harm to another organism without any harm or benefits to itself.

(b) _____ life tables are the most accurate types of life tables.

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

(i) Competitive exclusion principle

(ii) Ecology

(iii) Life Table

2. (a) Describe density dependent regulation of a population. (7)
- (b) Briefly describe Shelford's Law of Tolerance with the help of suitable examples. (4)
- (c) Elaborate the differences between autecology and synecology (4)
3. (a) Describe various possible outcomes of inter-specific competition with graphical representation and equations. (9)
- (b) Differentiate between r-selected and k-selected species. (6)
4. (a) Define ecological succession? Give the differences between pioneer and climax community. (6)
- (b) Explain the phenomenon of primary succession in a community with an example. (9)
5. (a) What are Biogeochemical cycles? Explain the role of micro-organisms in Nitrogen cycle. Along with a neat labelled diagram of Nitrogen cycle (10)

- (b) Define Food chain. Explain the differences between Linear and Y-shaped food chain, with examples. (5)

6. Write short notes on **any three** of the following:
(3 × 5)

- (a) Light as a limiting factor
- (b) Ecological Pyramids
- (c) Types of species interactions
- (d) Survivorship curves
- (e) Ecotone and edge effect
- (f) Vertical stratification in forests