

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate the full marks.

Use separate answer sheets for Section I and Section II.

Section I (Botany)

Group A

Rewrite the correct option of each question in your answer sheet.

(5×1=5)

- Capacity to develop a living vegetative cell into complete flowering plants is called:
 - Cellular totipotency
 - Reproduction
 - Cloning
 - Regeneration
- Spirogyra* is slippery to touch because of:
 - Presence of large central vacuole
 - Cellulosic cell wall
 - Mucilaginous sheath
 - Cytoplasmic strand
- Basic unit of classification is:
 - Genus
 - Species
 - Domain
 - Family
- Cytoplasm of one cell connects with other cell through:
 - Plasmodesmata
 - Cell wall
 - Cell membrane
 - Plasma membrane
- Best soil for agriculture is:
 - Sandy soil
 - Loamy soil
 - Silt
 - Clay

Group B

Give short answer to the following questions. (4 × 4 =16)

- Mention the types of cells on the basis of their advancement. Differentiate between them. (1+3)
- What is the physical basis of cell called? Describe the structure of cytoplasm. (1+3)

OR

Light is an essential factor for organisms. Discuss how does light influence living organisms. (4)

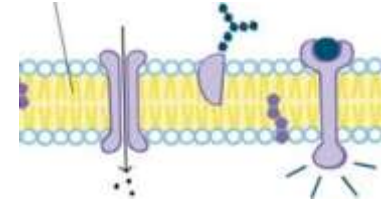
- Define binomial nomenclature. Discuss on its rules with examples. (1+2+1)

- In ecosystem two different species interact with each other. What does it called? Describe positive interaction between them. (1+3)

Group C

Give long answer to the following questions. (2×8=16)

- Identify the following diagram. Who proposed it? Label A, B, C and D. Describe its structure. (1+1+1+5)



- What is conjugation? Mention the types of conjugation occur in *Spirogyra*. Explain ladder like conjugation in *Spirogyra* with well labeled diagrams. (1+1+3+3)

OR

Who proposed five kingdom system of classification? Mention the five kingdoms of living beings. Describe its criteria with merits and demerits of five kingdoms. (1+1+2+4)

Section II (Zoology)

Group A

Rewrite the correct option of each question in your answer sheet.

(6×1=6)

- Who put forward the theory of special creation?
 - Amphedocle
 - Aristotle
 - Father Saurez
 - Charles Darwin
- The term biology was coined by:
 - Lamarck and Aristotle
 - Lamarck and Treviranus
 - Aristotle and Treviranus
 - Lamarck and Theophrastus
- Miller and Urey are not concerned with:
 - Origin of life
 - Biochemical synthesis of life
 - Spark discharge apparatus
 - Abiogenesis theory
- The closed blood vascular system is found in:
 - Platyhelminthes
 - Annelida
 - Porifera
 - Coelenterata
- The branch of biology which deals with study of insects is known as:
 - Ichthyology
 - Herpetology
 - Ornithology
 - Entomology

17. The common name of *Hydra* is:
- a. Fresh water animalcule
 - b. Fresh water polyp
 - c. Fresh water mussel
 - d. None of them

Group B

Give short answer to the following questions. (4×4=16)

18. Give the diagrammatic representation of Miller and Urey's experiment. What was the concept of this experiment? (3+1)
19. How is Biology related with different branches of science? Explain with suitable explanation. (4)
20. Identify the diagram given below. Write its characteristic features. (1+3)



21. Write important characteristics of class Rhizopodea. Give any two examples of this class with their scientific names. (2+2)

OR

Name different classes of phylum Porifera. Give two important features and one example from each class. (1+2+1)

Group C

Give long answer to the following questions. (2×8=16)

22. What is the view of Oparin and Haldane's theory on the origin of life? Name the first life formed on primitive ocean. Describe Cognogeny in detail. (1+1+6)
23. Draw a well labeled diagram of ultrastructure of *Paramecium caudatum*. Describe its external and internal structures. It is also known as infusorian animalcule, why? (3+4+1)

OR

Write down the general characteristics of phylum Platyhelminthes. Classify it up to classes with two important characters and one example from each class. (6+2)

The End

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate the full marks.

Use separate answer sheets for Section I and Section II.

Section I (Botany)

Group A

Rewrite the correct option of each question in your answer sheet.

(5×1=5)

- Living cell was discovered by:
 - Robert Hooke
 - Robert Brown
 - Antony Van Leeuwenhoek
 - Purkinje
- Cytoplasm of one cell connects with other cell through:
 - Plasmodesmata
 - Cell wall
 - Cell membrane
 - Plasma membrane
- Reserve food material in brown algae is:
 - Starch
 - Glucose
 - Glycogen
 - Mannitol
- Unicellular, prokaryotic organisms are kept in:
 - Monera
 - Protista
 - Plantae
 - Animalia
- In biotic interaction, one organism kills and feed another organism is called:
 - Symbiosis
 - Predation
 - Parasitism
 - Proto- cooperation

Group B

Give short answer to the following questions. (4×4=16)

- Draw a well labeled diagram of cell wall. Describe structure and functions of primary and secondary cell wall. (2+2)
- What is five kingdom classification? Discuss the criteria of five kingdom classification. (1+3)

OR

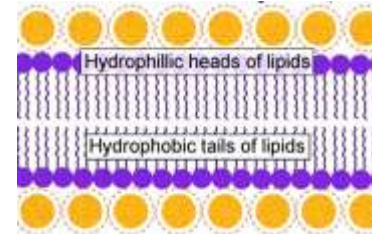
Draw a well labeled diagram of *Spirogyra*. Describe its structure. (2+2)

- Plants can reproduce vegetatively but animals cannot, why? Verify your answer with experiment. (1+3)
- What are abiotic factors in ecosystem? Discuss on the role of soil in organisms. (1+ 3)

Group C

Give long answer to the following questions. (2×8=16)

- Identify the following diagram. Who proposed it? Label A, B, C and D. Describe its structure with draw backs. (1+1+1+3+2)



- Define conjugation. Name the types of conjugation occurs in *Spirogyra*. Explain lateral conjugation in *Spirogyra* with well labeled diagrams. (1+1+3+3)

OR

What is pyrenoid? Describe the types of reproduction which form ladder like appearance with necessary diagram. (1+3.5+3.5)

Section II (Zoology)

Group A

Rewrite the correct option of each question in your answer sheet.

(6×1=6)

- Life arises from pre-existing life” is the view of:
 - Theory of special creation
 - Theory of abiogenesis
 - Theory of spontaneous generation
 - Theory of biogenesis
- The branch of biology which deals with the study of Biomolecules and their interaction is:
 - Molecular biology
 - Biotechnology
 - Palaeobiology
 - Exobiology
- Scientific name of fresh water polyp is:
 - Hirudinaria granulosa*
 - Fasciola hepatica*
 - Hydra*
 - Ascaris lumbricoides*
- When was the earth evolved?
 - 4000 million years ago
 - 4200 million years ago
 - 4500 million years ago
 - 4600 million years ago
- Who is the father of biology?
 - Theophrastus
 - Aristotle
 - Lamarck
 - Treviranus

17. Which of the following phylum bears choanocytes?

- a. Annelida
- b. Porifera
- c. Arthropoda
- d. Mollusca

Group B

Give short answer to the following questions. (4×4=16)

- 18. What are coacervates? Discuss in detail, Biogeny. (1+3)
- 19. Write the importance and scope of biology in different fields. (2+2)
- 20. What do you mean by triploblastic animals? How do flatworms differ from roundworms in body cavity, digestive tract and excretory organs? (1+3)
- 21. What is the basis of classification of phylum Protozoa? Write important characteristics of Sporozoa with examples. (1+3)

OR

Define coelom. Write the characteristic features of class Hirudinea. Also give two examples with their scientific name. (1+2+1)

Group C

Give long answer to the following questions. (2×8=16)

- 22. Give the diagrammatic representation of Miller and Urey's experiment in support of biochemical origin of life. Name the gases used in this experiment to create the primitive atmosphere of earth. What are the end products of this experiment? (6+1+1)
- 23. "*Paramecium* is unicellular, microscopic protozoan". Why is it called slipper animalcule? Describe the ultrastructure of *Paramecium caudatum* with well labeled diagram. (1+4+3)

OR

On what basis arthropods are categorized? Write important characteristics of phylum Arthropoda. Classify it up to classes with one example from each class. (1+5+2)

The End