अहम् योग्यः अस्मि

TAGORE INTERNATIONAL SCHOOL
VASANT VIHAR, NEW DELHI
MID TERM EXAMINATION (2024-2025)
BIOLOGY
CLASS: XI

Raza Iqbal
XI-D

Date: 23.09.23
No. of Pages: 7

Time: 3 hours
Max. Marks: 70

General Instructions:
(1) There are 33 questions in all. All questions are compulsory.
(2) This question paper has 5 sections: Section A, Section B, Section C, Section D and Section E.
(3) All the sections are compulsory.
(4) Section A contains 16 questions, 12 MCQ and 4 Assertion Reasoning based questions of 1 mark each, Section B contains 5 questions of 2 marks each, Section C contains 7 questions of 3 marks each, Section D contains 2 case study-based questions of 4 marks each and Section E contains 3 long answers questions of 5 marks each.
(5) There is no overall choice. However, an internal choice has been provided in one question in Section B, one question in Section C, one question in each CBQ in Section D and all 3 questions in Section E. You have to attempt only one of the choices in such questions.
(6) Wherever necessary, neat and properly labelled diagrams should be drawn.

SECTION A

Q1. Protonema stage is –
A) Creeping, green unbranched and frequently filamentous stage
B) Prostate, green, branched and frequently filamentous stage
C) Creeping, green, branched and frequently filamentous stage
D) Prostate, non – green, unbranched and frequently stage

(1 Mark)

Q2. Gymnosperms are-
A) Haplontic
B) Diplontic
C) Haplo-diplontic
D) Diplo-haplontic

(1 Mark)

Q3. Choose the correct statement about perigynous flower –
A) Gynoecium is situated in centre
B) Apart from gynoecium, rest parts are located on rim of thalamus almost at same level
C) Ovary is half inferior
D) All of these

(1 Mark)

Q4. Cassia has -
A) zygomorphic flowers with imbricate aestivation
B) actinomorphic flowers with twisted aestivation
C) zygomorphic flowers with twisted aestivation
D) actinomorphic flowers with imbricate aestivation

(1 Mark)

Q5. Given diagram represent –

A) Axile placentation
B) Parietal placentation
C) Free central placentation
D) Basal placentation

(1 Mark)

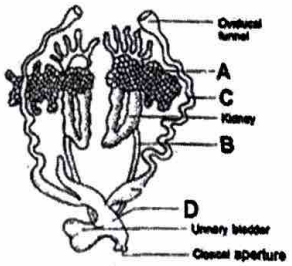
Q6. Choose correct order of cells from outside to inside in a sunflower root-
A) Epidermis – endodermis – cortex – pericycle
B) Epiblema – cortex – endodermis – pericycle
C) Epiblema – cortex – pericycle – endodermis
D) Epidermis – endodermis – pericycle – cortex

(1 Mark)

Q7. Read the given statements and choose the number of correct statements
(i) Leaf of dicot lack cuticle
(ii) Stomata on adaxial side of epidermis is more in number than abaxial side
(iii) Mesophyll is the ground tissue in dicot leaf
(iv) The adaxial epidermis may lack stomata
A) 1
B) 2
C) 3
D) 4

(1 Mark)

Q8. The figure given below is related to the female reproductive system of frogs. Identify A to D.



	A	B	C	D
A)	Ovary	Ureter	Oviduct	Cloaca
B)	Ovary	Urinogenital duct	Bidder's canal	Ovisac
C)	Ovary	Ureter	Ovisac	Oviduct
D)	Ovary	Urinogenital duct	Bidder's canal	Cloaca

(1 Mark)

Q9. Hypodermis of dicot stem is made of-
A) Parenchyma
B) Collenchyma
C) Sclerenchyma
D) All of these

(1 Mark)

Q10. The hypothesis that the bodies of animals and plant are composed of cells and their products was proposed by.
A) Schleiden and Schwann
B) Rudolf Virchow
C) Schwann only
D) Virchow and Schleiden

Q11. Which of the following is the essential infolding's of cell membrane (1 Mark)
A) Inclusion
B) Mesosome
C) Chromatophores
D) Plasmid

Q12. Which type of cells are likely to have a high number of mitochondria? (1 Mark)
A) Skin cells
B) Nerve cells
C) Muscle cells
D) Bone cells

Q13. Assertion: Mosses are of great ecological importance. (1 Mark)
Reason: They prevent soil erosion by forming a dense mat on the soil.
A) Both assertion and reason are correct and the reason is the correct explanation of assertion.
B) Both assertion and reason are correct and the reason is not a correct explanation of assertion.
C) Assertion is true but the reason is false
D) Assertion is false but the reason is true. (1 Mark)

Q14. Assertion (A): In monocot stems, the vascular bundles are scattered throughout the ground tissue.
Reason (R): Monocot stems lack a well-defined cortex and pith.
A) Both assertion and reason are correct and the reason is the correct explanation of assertion.
B) Both assertion and reason are correct and the reason is not a correct explanation of assertion.
C) Assertion is true but the reason is false (1 Mark)
D) Assertion is false but the reason is true.

Q15. Assertion (A): In dicot leaves, the veins are arranged in a reticulate pattern.
Reason (R): Dicot plants have collateral and closed vascular bundles in their leaves.
A) Both assertion and reason are correct and the reason is the correct explanation of assertion.
B) Both assertion and reason are correct and the reason is not a correct explanation of assertion.
C) Assertion is true but the reason is false
D) Assertion is false but the reason is true.

(1 Mark)

Q16. Assertion: There is hepatic portal system in frogs.
Reason: There is a venous connection between liver and intestine in frog.

A) Both assertion and reason are correct and the reason is the correct explanation of assertion.
B) Both assertion and reason are correct and the reason is not a correct explanation of assertion.
C) Assertion is true but the reason is false
D) Assertion is false but the reason is true. (1 Mark)

SECTION B

Q17. Differentiate between prokaryotic and eukaryotic cells in terms of their genetic material and organelles.

OR

A scientist discovers a new single-celled organism. After examining it under a microscope, she observes that it has a well-defined nucleus, numerous mitochondria, and a cell wall. Based on these observations, identify the type of cell and justify your answer. (2 Marks)

Q18. How do gymnosperms differ from angiosperms in terms of seed formation and reproductive structures? (2 Marks)

Q19. Describe the structure and function of the skin in frogs. (2 Marks)

Q20. During an experiment, a student observes that when a certain cell is placed in a hypertonic solution, it shrinks in size. Explain the process behind this observation and identify the type of solution that caused this effect. (2 Marks)

Q21. Differentiate between a simple leaf and a compound leaf in terms of their structure. (2 Marks)

SECTION C

Q22. A biologist discovers a new organism in a tropical rainforest. The organism has the following characteristics:

1. It has a cell wall made of chitin.
2. It lacks chlorophyll and does not perform photosynthesis.
3. It reproduces both sexually and asexually.

Based on these characteristics, classify the organism into the appropriate kingdom and explain your classification. (3 Marks)

Q23. A gardener is planning to plant a garden with various flowering plants. He wants to ensure that he includes plants with different types of leaf arrangements for aesthetic diversity and functional purposes. Based on your knowledge of leaf morphology, advise the gardener on three different types of leaf arrangements and their potential benefits in the garden. (3 Marks)

Q24. Compare the open and closed circulatory systems, and provide examples of animals that have each type.

OR

Describe the key differences between the phyla Arthropoda and Annelida in terms of body segmentation, exoskeleton, and type of circulatory system. (3 Marks)

Q25. Explain the structure and function of mitochondria in a eukaryotic cell. (3 Marks)

Q26. (i) Why are Bryophytes called amphibians of the plant kingdom?
(ii) What are rhizoids? What is their role?
(iii) What do you understand from thalloid body? (3 Marks)

Q27. Describe the differences between monocot and dicot plants in terms of their leaf venation, root development, and floral parts. (3 Marks)

Q28. Explain the functions of the following organs in a frog: the liver, the heart, and the lungs. Additionally, describe how these organs contribute to the overall physiology of the frog. (3 Marks)

SECTION D

Q29. Seeds and fruits are a result of fertilization or sexual reproduction in plants. The formation of fruits in flowers starts from the moment the pollen reaches the stigma followed by fertilization. Fruit formation is a post-fertilization event, after the fertilization, the ovary undergoes changes to form the fruit whereas ovules form the seeds.
(a) What is a parthenocarpic fruit? Why would one be interested in developing a parthenocarpic fruit?
(b) Draw a sectional view of mango drupe and label two parts. Name the part that is edible. (2+2= 4 Marks)

OR

Rahul and his father went to the nearby garden to spend some time together. His father was intrigued with the wide variety of flowers in the garden. He asked him some questions that are given below. Rahul, who was a student of biology, answered all the questions correctly. Answer the following questions-
i- How do the stamen of China rose, pea, and citrus differ from each other?
ii- Differentiate actinomorphic and zygomorphic flowers by citing suitable examples.
iii- How can you differentiate a pinnately and a palmately compound leaf?
iv- What are cymose and racemose types of inflorescences? (4 Marks)

Q30. A zoologist discovers a new species of animal in a coastal region. The animal exhibits the following characteristics:
1. It has a soft, unsegmented body and lives in a moist environment.
2. It has a mantle and a shell, which provides protection.
3. It possesses a muscular foot used for locomotion.

Based on these observations, answer the following questions:
a) Identify the phylum to which this animal belongs and provide two examples of animals in this phylum.
b) Describe the function of the mantle and the shell in this phylum.
c) Explain the significance of the muscular foot in the lifestyle and survival of this animal. (4 Marks)

OR

A newly discovered marine animal species has a radially symmetrical body and lives attached to a marine substrate. The animal has stinging cells called nematocysts and is capable of both sexual and asexual reproduction. It

possesses a central mouth surrounded by tentacles. Based on these observations, answer the following questions:

1. Identify the phylum to which this animal belongs and give one example of an animal in this phylum.
2. Describe the role of nematocysts in the animal's survival.
3. Explain the significance of radial symmetry and the central mouth with tentacles for this animal's lifestyle. (1+1+2= 4 Marks)

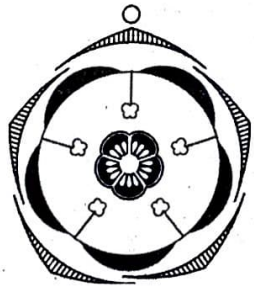
SECTION E

Q31. Answer the following related to the digestive system of frogs-
(i) Where is bile stored in the body of a frogs?
(ii) Which organ helps in catching the prey?
(iii) Draw the digestive system of a frog and label any four parts. (1+1+3= 5 Marks)

OR

(i) How are the testes attached to the kidneys in frog?
(ii) How are the sperms transported from the testes to cloaca? How is this transport different from humans?
(iii) Draw the male reproductive system of the frog and label four important parts. (1+1+3= 5 Marks)

Q32. Given below is a floral diagram.



a. Identify the aestivation shown in the calyx and corolla of the above flower.
b. Name the type of placentation seen in its ovary. Give example of a flower showing such placentation.
c. What kind of androecium do they have?
d. Write the floral formula of the given flower. (1+1+1+2= 5 Marks)

OR

Read the passage below and answer the questions that follows:
Sahil used to go to vegetable market with his grandfather. Grandfather told him that chilies, brinjal and tomato belong to the same family of plants and asked him to find out the similarities in these plants.
a. Identify the family to which these plants belong and give its economic importance.
b. Mention two features of the leaves of the plants belonging to this family.
c. Name any two medicinal plants belonging to the same family.
d. What kind of flowers they have, unisexual or bisexual? Also mention the kind of symmetry the flowers exhibit. (2+1+1+1= 5 Marks)

Q33. a) Association between mycobiont and phycobiont are found in_____.
b) What is the principle underlying the use of cyanobacteria in agricultural fields for crop improvement? Give examples.
c) The common name of pea is simpler than its botanical (scientific) name Pisum sativum. Why then is the simpler common name not used instead of the complex scientific/botanical name in biology? *(1+2+2= 5 Marks)*

OR

a) What observable features in *Paramoecium* would make you classify it under Kingdom Protista?
b) Fungi are cosmopolitan, write the role of fungi in your daily life. *(2+3= 5 Marks)*