



INDIAN SCHOOL SOHAR
SECOND TERM EXAM-2017
BIOLOGY

No Of Printed Pages:3

STD XI
21.11.17

Marks:70
Time:3Hrs

General Instructions:-

- (i) This question paper consists of five sections **A, B, C, D and E**. Section **A** contains **5** questions of **1** mark each, section **B** is of **5** questions of **2** marks each, section **C** is of **12** questions of **3** marks each, Section **D** contains **1** question of **4** marks and section **E** is of **3** questions of **5** marks each.
- (ii) All questions are compulsory.
- (iii) There is no overall choice. However, an internal choice is provided in one question of **2** marks, one question of **3** marks and all questions of **5** marks weightage. Attempt only **one** of the choices in such questions.
- (iv) Questions of section **A** are to be answered in one word or one sentence each, section **B** in approximately 20-30 words each, section **C** in 30-50 words each and section **D** in 30-40 words and section **E** in 80-120 words each.
- (v) Wherever necessary, the diagrams drawn should be neat and properly labeled.

SECTION-A

1. The development of *P.americana* is paurometabolous. Give reason 1
2. Enzymes get denatured at high temperature. How do organisms living under extremely high temperature survive? 1
3. Why are *Plasmodium* (malarial parasite)-like protozoans called sporozoans? 1
4. What will happen to the water potential of pure water (i) if some solute is dissolved in it, (ii) if a pressure greater than atmospheric pressure is applied to it? 1
5. All vertebrates are chordates but all chordates are not vertebrates. Justify. 1

SECTION-B

6. List the main criteria for classification of organisms in the five kingdom classification. 2
7. Describe the modification seen in (i) *Rhizophora* and (ii) *Eichhornia*. 2
8. Differentiate between (i) saturated and unsaturated fatty acid and (ii) nucleotides and nucleosides. 2
9. What are the conditions necessary for fixation of atmospheric nitrogen by *Rhizobium*? Mention their role in nitrogen fixation. 2
10. Give the antagonistic effect of the following PGRs. 2
(a) Auxin and cytokinin (b) Abscisic acid and gibberellins.

OR

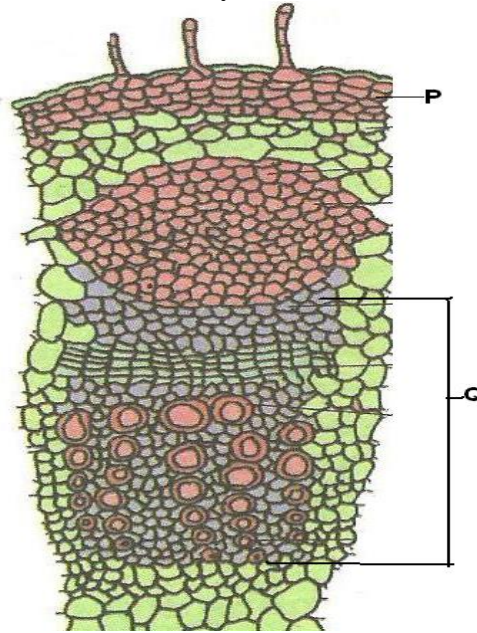
The role of four mineral elements as plant nutrients are given below. Identify the element.

- (a) helps in pollen germination (b) constituent of the ring structure of chlorophyll
- (c) photolysis of water (d) Opening and closing of stomata.

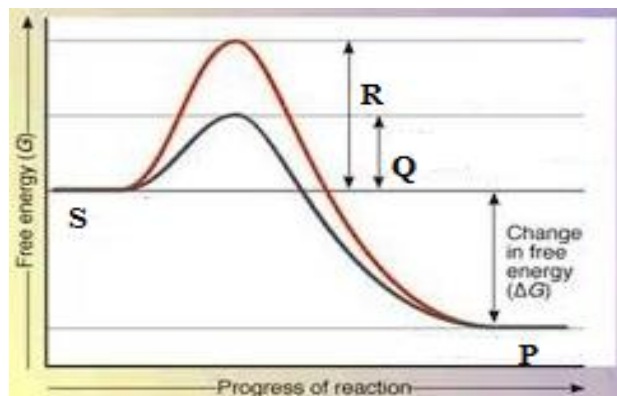
SECTION-C

11. Both bryophytes and pteridophytes require water for fertilization, yet they differ from each other in many aspects. Bring out any three differences in their life cycle. 3
12. Mammals are considered to be the most successful group of animals. Mention any six characteristic features that enable them to adapt to a variety of habitats. 3

13. Explain, with suitable examples the different types of phyllotaxy. 3
14. Answer the following with reference to the anatomy of dicot stem: 3



- (a) Comment on the parts labelled 'P' and Q in the given figure.
- (b) Name the innermost layers of the cortex. Give its function
15. Specialised junctions provide both structural and functional links between individual cells. 3
Name the types of cell junctions and write their functions.
16. Explain, the nature of bond linking monomers in a polypeptide, polysaccharide, and a nucleic acid. 3
17. Plastids bear some specific pigments, that impart specific colours to the plants. How are leucoplasts 3
classified based on the stored nutrients?
18. One of the most important functions of the plasma membrane is the transport of molecules across 3
it. How are molecules transported across the membrane? (any three points)
19. Study the given graph and answer the following: 3

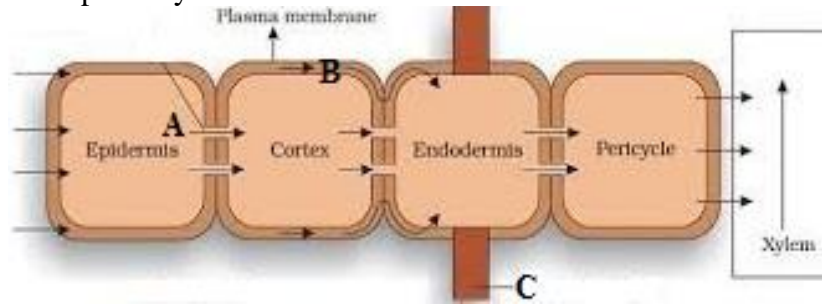


- (a) What does Q and R represent in the above graph?
- (b) What is meant by transition state?
- (c) What would happen if 'P' is at a lower level than 'S'?
20. Some plants require a periodic exposure to light to induce flowering. How plants are classified 3
based on the flowering responses? Give an example.

OR

How is the formation of proton gradient in respiration different from photosynthesis?

21. Measurements reveal that the forces generated by transpiration can create pressure sufficient to lift water over 130 meters high. How is this achieved in tall trees? 3
22. Water once absorbed by the root hairs can move deeper into root layers. Given below is the figure depicting the two distinct pathways. 3



- (a) Identify pathway 'A' and 'B' in the given figure and define them.
 (b) Label 'C' and mention its role.

SECTION-D

23. New techniques have identified a wide range of organisms with the capacity to carry out biological nitrogen fixation-greatly expanding our appreciation of the diversity and ubiquity of Nitrogen fixers. Nevertheless determining rates and controls of BNF is crucial to placing anthropogenic changes to the Nitrogen cycle in context. It suggests that the human alteration of the Nitrogen cycle is substantially larger than assumed. 4
- (i) Nitrogen is the most prevalent element in living organisms. Justify.
 (ii) How is nitrogen fixation carried out in nature?
 (iii) Cite two examples to show symbiotic nitrogen fixation.
 (iv) How is BNF beneficial to farmers and the ecosystem?

SECTION-E

24. Meiosis ensures the production of haploid phase in the life cycle of sexually reproducing organism. Enumerate the events involved in Prophase I of meiosis. 5

OR

Describe the ultrastructure of the nucleus with the help of a labelled diagram

25. Cockroaches are dioecious. Differentiate between male and female reproductive system in cockroaches. 5

OR

Explain the process of secondary growth in the stems of woody angiosperms.

26. (a) Give a schematic representation of the 'Z' scheme of light reaction. 5
 (b) C₄ plants are special. Justify. (Any four points)

OR

- (a) Schematically represent the metabolic fate of pyruvate in the mitochondrial matrix in the presence of oxygen.
 (b) Why is the presence of oxygen vital in aerobic respiration?

*****THE END*****