CBSE Question Paper 2006

Delhi Set-1

Class-12 Biology

General Instructions:

1. This question paper consists of four sections A, B, C, and D. Section A contains 5 questions of one mark each. Section B is of 10 questions of two marks each. Section C is of 10 questions of three marks each and Section D is of 3 questions of five marks each.
2. All questions are compulsory.
3. There is no overall choice. However, an internal choice has been provided in one question of 2 marks, one question of 3 marks and three questions of 5 marks weightage. Attempt only one of the choices in such questions.
4. Question numbers 1 to 5 are to be answered in one word or one sentence each.
5. Question numbers 6 to 15 are to be answered in approximately 20-30 words each.
6. Question numbers 16 to 25 are to be answered in approximately 30-50 words each.
7. Question numbers 26 to 28 are to be answered in approximately 80-120 words each.

SECTION - A

1. What prevents collapsing of our trachea during breathing?

2. What advantage does the sea anemone get in the sea anemone-hermit crab facultative mutualism? Give an alternative term for this kind of mutualism.

3. Name the nitrogenous waste excreted in the larval and adult stages of frog respectively.

4. In a wheat field, some broad-leaved weeds were found by a farmer. Which phytohormone can be used to eradicate them?

5. Correct the statement given below with respect to brazzein:
“Brazzein is a high calorie carbohydrate.”

SECTION - B

6. What is reverse osmosis? Give its one application.

7. Which two heart sounds are heard through the stethoscope when placed on the chest? When are these sounds produced respectively?

8. How is polyspermy prevented in humans?

9. Write the full form of ELISA? Give example of the clinical application of ELISA test.

10. What is fermentation? Name any two organic compounds produced in this process.

Or

What is glycolysis? Name the two monosaccharides which readily enter the glycolytic pathway.

11. Draw a diagrammatic sketch of the microscopic view of a mammalian sperm and label any four parts in it.

12. Name the location and function of Meibomian glands in the human eye.

13. What would happen to the successive trophic levels in the pyramid of energy if the rate of reproduction of phytoplankton was slowed down? Suggest two factors, which could cause such a reduction in phytoplankton reproduction.

14. What is cryopreservation? Give its one use.
Commercial significance of cryopreservation is related to preservation of fishes, meat and other foods.

15. What is meant by total fertility rate? How does it differ from replacement level?

SECTION - C

16. What is agamospermy? How is agamospermy different from parthenogenesis and parthenocarpy?

17. i. How can haploid plants be raised in the laboratory?

ii. Name the plant first used in India to produce haploid plants.

iii. Can haploid plants raise their own progeny? Give reason.

18. What is the law of limiting factors? How would the rate of photosynthesis be affected if the soil water becomes limiting? Explain.

19. Give information as asked about the following mineral nutrients in plants:

a. Iron:
i. it is a constituent of—,
ii. its one typical deficiency symptom.

b. Zinc:
i. the group of enzymes it activates,
ii. it is needed for the synthesis of -.

c. Phosphorus:
i. the form in which it is absorbed from the soil,
ii. its deficiency effect on seed germination.

20. What is the role of calcium ions, troponin and F-Actin during contraction in striated muscles of humans?

Or

Explain giving one example of each, the three types of joints in human skeleton, based on the capacity of movement.

21. A patient was complaining of frequent urination, excessive thirst, hunger, and tiredness. His fasting blood glucose level was found higher than 130 mg/dl on two occasions.
i. Name the disease.
ii. Give the root cause of this disease.
iii. Explain why the blood glucose level is higher than 130 mg/dl.

22. Name and explain any three adaptations of mangroves to the conditions prevailing in the Sunderbans (West Bengal)

23. What is eutrophication" Explain its consequences on the life of plants and animals living in such waters. Why is oxygen depletion in a eutrophicated water-body faster at night than

during the day?

24. i. What is a vaccine. Give an example of a vaccine produced by recombinant DNA technology?
ii. Name the disease against which DTP vaccination develops immunity.

25. Define senescence. Explain the 'programmed senescence theory' of ageing.

SECTION - D

26. Explain the process of Crassulacean acid metabolism. How is it advantageous to plants?

Or

Explain the major steps in Krebs cycle. Why is this cycle also called citric acid cycle?

27. What is sustainable agriculture? Explain the contribution of biopesticides and biofertilisers in sustainable agriculture.

Or

What is electrocardiography? What is meant by P-Q interval and S -T interval in electrocardiography? Mention two medical applications of this technique.

28. i. Draw a section of the microscopic structure of human retina and label any six parts in it.

ii. Name the structure that determines the eye colour in humans. What is the normal function of this structure?

iii. Name the point of sharpest vision and the point of no vision in human eye.

Or

i. Draw the basic structure of a neural synapse and label the following parts in it Presynaptic cell, Postsnaptic cell, Vesicles, Neurotransmitter, Receptor, Synaptic cleft.

ii. Give any two differences between chemical synapses and electrical synapses.