CBSE Question Paper 2007

Delhi Set-3

CBSE 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. Mention the significant role of lymph capillaries (lacteals) in villi.

2. In a wheat field, some broad-leaved weeds were seen by a farmer. Name the synthetic plant hormone you would suggest to the farmer to get rid of them.

3. What is the starting point of a detritus food chain?

4. Why is cardiac pacemaker a life-saving device?

5. A container is divided into compartments A and B using a semipermeable membrane. Compartment A is filled with 10 percent sucrose solution and B with 5 percent sucrose solution. Mention the direction in which the water will move between the two compartments. Name the process by which the water moves.

SECTION B

6. What is biological nitrogen fixation? Name two organisms which fix nitrogen asymbiotically.

Or

In which form do plants absorb potassium from the soil? List any two potassium deficiency symptoms in plants.

7. Who discovered Sertoli cells? Mention their role in spermatogenesis.

8. What is anthropogenic extinction? How is it different from mass extinction?

9. Name the animal in which Rh factor was first discovered. Mention the problem expected to occur if an Rh^- mother bears an Rh^+ foetus in humans.

10. Where do you find complex V in mitochondria? What is its role?

11. How do sciophytes and heliophytes adapt to different light intensities? Explain.

12. One pea plant is illuminated with green light and another pea plant, similar in all respects (size and leaf area etc.) illuminated with blue light. In which plant will the rate of photosynthesis be higher and in which will it be lower, if all other conditions are identical? Give reasons.

13. In an autoimmune disorder, a person produces antibodies that mimic the action of TSH. Name the disorder, which results due to this situation. Give its symptoms.

14. Your friend was diagnosed to be suffering from neurotic anxiety. Write any two symptoms that led to this diagnosis. What is its cause?

15. Draw a sectional view of a pollen grain and label the following parts:
(i) Intine
(ii) Exine
(iii) Germ pore
(iv) Generative cell

SECTION C

16. What is AV node? Where is it located in the human body? Mention its function.

Or

What is meant by chloride shift? Where does it occur in the human body? What is its significance?

17. Describe greenhouse effect and list two greenhouse gases.

18. What is biomass fuel? Explain its significance. Name the process by which biomass is converted into biogas.

19. What is haploidy? How are haploid plants raised? How are they helpful in plant breeding?

20. What is endocrine theory of ageing? Write briefly the role of melatonin and DHEA hormones in ageing.

21. Where are auxins synthesized in the plant? Explain any four of their applications.

22. Explain the mechanism of opening and closing of stomata based on the role of potassium ions.

23. List the cause and the symptom of each of the following in humans:
(i) Anaemia
(ii) Pernicious anaemia
(iii) Macrocytic anaemia

24. What is myogenic mechanism of autoregulation of glomerular filtration? What is its importance?

25. What is single cell protein? How is it produced? Discuss its importance. In what ways is it useful to humans?

SECTION D

26. Give a schematic representation of non-cyclic photophosphorylation showing both the photosystems.

Or

Give a schematic representation of the citric acid cycle. Where does it occur in a cell?

27. What is a synovial joint? What makes such a joint move freely? Describe any three kinds of synovial joints in the human body, giving one example of each.

Or

What is a 'reflex action'? With the help of an example describe the functions of the various components of a spinal reflex arc.

28. Explain the procedure involved in detecting the presence of antigen in a sample by ELISA. Why is ELISA specially recommended for detection of antigens?

Or

(i) Discuss on what does the success of organ transplantation depend and how graft rejection can be prevented in humans.

(ii) Explain the following:
(a) Haplotype
(b) Autograft