CBSE Class 12 Biology 2016 - Set 57-2-1

Question Paper

Conducted by the Central Board of Secondary Education (CBSE)

Time Allowed: 3 Hours **Maximum Marks: 70**

General Instructions

(i) There are a total of 26 questions and five sections in the question paper. All questions are compulsory.

(ii) Section A contains questions number 1 to 5, Very Short Answer type questions of one mark each.

(iii) Section B contains questions number 6 to 10, Short Answer type-I questions of two marks each.

(iv) Section C contains questions number 11 to 22, Short Answer type-II questions of three marks each.

(v) Section D contains question number 23, Value Based Question of four marks.

(vi) Section E contains questions number 24 to 26, Long Answer type questions of five marks each.

(vii) There is no overall choice in the question paper, however, an internal choice is provided in one question of two marks, one question of three marks and all three questions of five marks. An examinee is to attempt any one of the questions out of the two given in the question paper with the same question number.

Section A

1. Name two animals that exhibit Oestrus cycle.

2. What is point mutation? Give one example.

3. Mention one difference to distinguish an exon from an intron.

4. Suggest a molecular diagnostic procedure that detects HIV in a suspected AIDS patient.

5. What does nature's carrying capacity for a species indicate?

Section B

6. Write the location and functions of Myometrium and Endometrium.

7. How does a test cross help to determine the genotype of an individual?

OR

7. Mention two applications of DNA polymorphism.

8. What kind of areas are suitable for practicing apiculture? Write the scientific name of the variety commonly reared for the purpose.

9. Suggest four advanced ex-situ methods to conserve threatened biodiversity.

10. Lower BOD of a water body helps reappearance of clean-water organisms. Explain.

Section C

11. "Post-industrialization, the population of melanised moth increased in England at the expense of white-winged moths." Provide explanations.

12. Why does the 'insertional inactivation' method to detect recombinant DNA is preferred to 'antibiotic resistance' procedure?

13. Explain the role of the enzyme EcoRI in recombinant DNA technology.

14. Draw a labelled diagram of the embryonic stage that gets implanted in the human uterus. State the functions of the two parts labelled.

15. (a) Draw a labelled sketch of a mature 7-celled, 8-nucleate embryo-sac.
(b) Which one of the cell in an embryo-sac produce endosperm after double fertilization?

16. Narrowly utilitarian arguments are put forth in support of biodiversity conservation. Explain the other two arguments that are put forth in support of the same cause.

17. On a visit to a Hill station, one of your friend suddenly became unwell and felt uneasy.
(a) List two symptoms you would look for to term it to be due to allergy.
(b) Explain the response of the body to an allergen.
(c) Name two drugs that can be recommended for immediate relief.

18. (a) Why did Hershey and Chase use radioactive sulfur and radioactive phosphorus in their experiment?
(b) Write the conclusion they arrived at and how.

19. (a) Explain any two defence mechanisms plants have evolved against their predators.
(b) How does predation differ from parasitism?

20. Human blood group is a good example of multiple allelism and co-dominance. Justify.

21. (a) What is Gene therapy?
(b) Describe the procedure of such a therapy that could be a permanent cure for a disease. Name the disease.

22. Draw a pyramid of biomass and pyramid of energy in sea. Give your comments on the type of pyramids drawn.

OR

22. (a) Rearrange the following greenhouse gases in increasing order of their relative contribution to the total global warming : N_2O; CFC; CO_2; C_2H_4.
(b) What is the effect of global warming on polar ice-caps? Comment on its possible ecological impact.

Section D

23. You have a friend whose parents are too indulgent in his/her daily affairs. They think him/her to be still young which makes him/her sad and is upset all the time. As he/she feels that the parents should give him/her opportunity to take independent decision on some issues.
(a) Would you support your friend and why?
(b) Write the characteristics of this age group.
(c) List two curative measures.

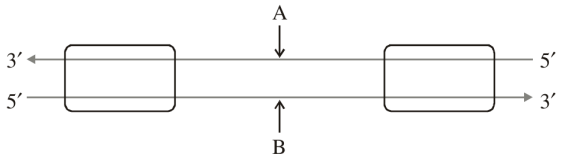
Section E

24. (a) How does a Human Immunodeficiency Virus (HIV) replicate in a host?
(b) How does an HIV-infected patient lose immunity?
(c) List any two symptoms of this disease.

OR

24. Describe the process of waste-water treatment under the following heads :
(a) Primary treatment.
(b) Secondary treatment.

25.



(a) Identify strands 'A' and 'B' in the diagram of transcription unit given above and write the basis on which you identified them.
(b) State the functions of Sigma factor and Rho factor in the transcription process in a bacterium.
(c) Write the functions of RNA polymerase-I and RNA polymerase-III in eukaryotes.

OR

25. Describe the packaging of DNA helix in a prokaryotic cell and an eukaryotic nucleus.

26. (a) Where does spermatogenesis occur in human testes? Describe the process of spermatogenesis upto the formation of spermatozoa.
(b) Trace the path of spermatozoa from the testes upto the ejaculatory duct only.

OR

26. Explain the events upto fertilization that occur in a flower after the pollen grain has landed on its compatible stigma.

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