CBSE QUESTION PAPER (2012-13)

Code No. 57/1/1

Time: 3 hours **M.M 70**

BIOLOGY (THEORY)

General instructions;

(i) All questions are compulsory

(ii) This question paper consist of section A, B, C and D. A contain 8 questions of one mark each, section B is of 10 questions of two marks each, section C is of 9 questions of three marks each and section D is of 3 questions of five marks each.

(iii) There is no overall choice. however, an internal choice has been provided in one question of 2 marks., one question of 3 marks and two questions of 5 marks weight age. a student has to attempt only one of the alternatives is such questions.

(iv) Whenever necessary, the diagram draw should be neat and properly labeled.

Section -A

1. An anther with malfunctioning tapetum often fails to produce viable male gametophytes. give any one reason.
2. Why sharing of injection needles between two individuals is not recommended?
3. Name the enzyme and state its property that is responsible for continuous and discontinuous replication of the two strands of a DNA molecules.
4. Identify the examples of convergent evolution from the following.
   i) Flippers of penguins and dolphins
   ii) Eyes of octopus and mammals
   iii) Vertebrate brains
5. Write the importance of MOET
6. Why is the enzyme cellulose needed for isolating genetic material from plant cells and not from the animal cells?

7. Name the type of bio-diversity represented by the following.
   a) 50,000 different strain of rice in India.
   b) Esturies and alpines meadows in India.
8. Write the equation that helps in deriving the net primary productivity of an ecosystem.

Section-B

9. Geitonogamous flowering plants are genetically autogamous but functionally cross-pollinated. justify
10. When and Where do chronic villi appear in human? State their function
11. In a cross between two plants some of the off springs produced were dewarf with the help of Punett square how this is possible.
12. A student on a school trip started sneezing and wheezing soon after reaching the hill station for no explained reasons. But, on return to the plains, the symptoms disappeared. What is such a response called? How does the body produce it?
13. Name two commonly used bio-reactors. State the importance of using a bio-reactor.
14. Write the function of adenosine diaminase enzyme. State the cause of ADA deficiency patient.
15. Expand the following and mention one application of each.
    i) PCR
    ii) ELISA

or

a) Mention the difference in mode of action of exonuclease and endonuclease
b) How does restriction endo-nuclear function.

16. Name any two sources of e-wastes and write two different ways for this disposal.
17. Why the pyramid of energy is always upright?
18. Explain why very small animals are rerely found in polar region.

Section-C

19. Draw a diagram of microscopic structure of human sperm. label the following part in it and write their function.
    a) Acrosome
    b) Nucleus
    c) middle Piece
20. With the help of any two suitable examples explain the effect of an anthropogenic action of organic evolution.
21. a) Why is human ABO blood group gene considered a good example of multiple alleles?
    b) Work out across up to F_1 generation only, between a mother with blood group A (Homozygous) and a father with blood group B (Homozgyous). Explain the pattern of inheritance exhibited.
22. Describe the structure of a RNA polynucleotide chain have four different types of nucleotide.
23. Differentiate between in breeding and out breeding in cattle. State one advantage and one disadvantage for each one of them.
24. a) Why are the fruit juices bought from the market clearer as compared to those made at home?
    b) Name the bio-active molecules produced by Trichoderma polysporum and monascus purpureus
25. a) Why are transgenic animals so called?
    b) Explain the role of transgenic animals in
        i) Vaccine Safety
        ii) Biological products

        With the help of an example each.
26. How have human activities caused desertification? Explain?
27. Explain mutualism with the help of any two examples. How is it different from communsalism?

Section-D

28. a) Draw a diagrammatic sectional view of a mature anatropous ovule and label the following part in it.

i) That develops into seed coat

ii) That develops into an embryo after fertilization.

iii) That develops into an endosperm in an albunious seed.

iv) Through which the pollen tube gain entry into the embryo sac.

v) That attaches the ovule to the placenta

b) Describe the characteristic features of wind pollinated flower.

Or

a) Draw a diagrammatic sectional view of the female reproductive system of human and label the parts.

i) Where the secondary oocyte develop.

ii) Which help in collection of ovum after ovulation

iii) Where fertilization occurs

iv) Where implantation of embryo occurs.

b) Explain the role of pituitary and ovarian hormones in menstrual cycle in human females.

29. Describe the asexual and sexual phases of life cycle of plasmodium that causes malaria in human.

Or

a) What is plant breeding? List the two steps the classical plant breeding involves.

b) How has the mutation breeding helped is improving crop varieties? Give one example of this technique has helped.

c) How has the breeding program helped in improving the public nutritional health? State two examples in support of your answer.

30. A child suffering from Thalassemia is born to normal couple. But the mother is being blamed by the family for delivering a sick baby.

a) What is Thalassemia?

b) How would you counsel the family not to blame the mother for delivering a child suffering from this discase? Explain.

c) List the values your counseling can propagate in the families.