AMRITA VIDYALAYAM

FIRST TERMINAL EXAMINATION 2018 -'19

Class : XII **Marks : 70**

Time : 3 hrs

BIOLOGY (044)

GENERAL INSTRUCTIONS:

1. ***There are a total of 26 questions and five sections in the question paper. All questions are compulsory.***
2. ***Section A contains question numbers 1 to 5, very short-answer type questions of 1 mark each.***
3. ***Section B contains question numbers 6 to 10, short-answer type I questions of 2 marks each.***
4. ***Section C contains question numbers 11 to 22, short-answer type II questions of 3 marks each.***
5. ***Section D contains question number 23, value based question of 4 marks.***
6. ***Section E contains question numbers 24 to 26, long-answer type questions of 5 marks each.***
7. ***There is no overall choice in the question paper; however, an internal choice is provided in all the three questions of 5 marks. In these questions, attempt any one of the two given alternatives.***

SECTION - A

1. What is pericarp? Mention its functions.
2. What is cistron?
3. What is the economic value of spirulina?
4. Write the location and function of sertoli cells.
5. Mention the role of pioneer species in primary succession on rocks.

SECTION - B

6. Enumerate any four essentials of good, effective dairy farm management practices.
7. a) What is asexual reproduction?
   b) How budding occurs in yeast?
8. Name two hormones that are constituents of contraceptive pills. Why do they have high and effective contraceptive value?
9. What is point mutation? Give one example.
10. What is meant by monosporic development of female gametophyte?

    OR

    Differentiate between geitonogamy and xenogamy in plants. Which one between the two will lead to inbreeding depression and why?

SECTION - C

11. a) When and how does placenta develop in human female?
    b) How is the placenta connected to the embryo?
    c) Placenta acts as a endocrine gland. Explain.

    OR

    Where does fertilization occur in humans? Explain the events that occur during this process.
12. What is adaptive radiation? When an adaptive radiation be referred to as convergent evolution?

Give an example.

13. Briefly explain four phases of menstrual cycle.
14. In a family, there are four children, each has a different blood group. The mother has blood group A and father has group B. Work out a cross to explain how is it possible.
15. a) What do 'Y' and 'C' stand for in 'YAC' and 'BAC' used in Human Genome Project (HGP)? Mention their role in the project.
    b) Expand SNPs identified by scientists in HGP.
16. Suggest the aspects of reproductive health which need to be given special attention in the present scenario.
17. What is ecological succession? Where and why would the rate of succession be faster in newly created pond or a forest destroyed by a forest fire?
18. a) State the objective of animal breeding.
    b) List the importance and limitations of inbreeding. How can the limitations be overcome?
    c) Give an example of a new breed each of cattle and poultry.
19. What is Hardy - Weinberg principle of equilibrium indicates? List any two factors that could alter the equilibrium.
20. Define decomposition. Briefly explain the processes involved in decomposition.
21. The base sequence in one of the strands of DNA is TAGCATGAT.
    a) Give the base sequence of its complementary strand.
    b) How are these base pairs held together in a DNA molecule?
    c) Explain the base complementarity rules.
22. State what is apomixis? Comment on its significance. How can it be commercially used?

SECTION - D

23. Reproductive and child health care (RCH) programmes are currently in operation. One of the major tasks of these programmes is to create awareness amongst people about a wide range of reproduction related aspects, as this is important and essential for building a reproductively healthy society.
    a) 'Providing sex education in school is one of the ways to meet this goal'. Give four points in support of your opinion regarding this statement.
    b) List any two indicators of a reproductively healthy society.

SECTION - E

24. Give the genetic explanation for the following cross. When a tall pea plant with round seeds was crossed with a dwarf pea plant with yellow seeds, then all the individuals of F_1 progeny were tall with round seeds. However selfing among F_1 population led to a 9:3:3:1 phenotypic ratio.

    OR

    Inheritance of flower colour in garden pea and snap dragon differs. Why? Explain showing the crosses up to F_2 generation.
25. How did Hershey and Martha Chase establish that DNA is transferred from virus to bacteria?

    OR

    a) Describe the series of experiments of F. Griffith. Comment on the significance of the results obtained.
    b) State the contribution of MacLeod, McCarty, and Avery.
26. With advancements in genetics, molecular biology and tissue culture, new traits have been incorporated into crop plants. Explain the main steps in breeding of a new genetic variety of crop.

    OR

    With a neat diagram explain the 7- celled 8 nucleate nature of the female gametophyte.