

Name of School.....

First Term Examination Aug.2025

Biology-Botany

Time: 2hrs

Plus Two

Score: 60

Answer any 3 questions from 1 to 5. Each carries 1 score.

1. First restriction endonuclease enzyme is.....
2. In rDNA technology the DNA fragments can be separated by technique called.....
3. Fruit developed without fertilisation are called.....
4. Name the female gametophyte in angiosperm.
5. Name the enzyme used to join DNA fragments in rDNA technology.

Answer any 9 questions from 6 to 16. Each carries 2 scores.

6. Isolation of DNA from plant cell involves many steps. Explain the different steps.
7. Water pollinated flowers have many peculiarities. Write down any four such peculiarity.
8. Multiple copies of gene of interest can be synthesised through PCR. Expand PCR and write its steps.
9. What are palindromic DNA nucleotide sequences? Write one example for palindromic sequence.
10. In angiosperms during fertilization two types of fusion occur in the embryo sac. a) Name the types of fusion b) Which are the nuclei involved in each fusion
11. Define microsporogenesis. Write the ploidy of microspore
12. Write any four devices to discourage self pollination and to encourage cross pollination in flowering plants.
13. The DNA fragments can be separated using gel electrophoresis. Name the gel used in this technique and write the name of technique used to

remove the DNA from the gel.

14. In certain seeds more than one embryo can be seen.. Name this condition and give an example.

15. Origin of replication and selectable markers are the two important features required for a cloning vector. Explain their role in facilitating cloning.

16. Different stages of development in dicot embryo are there. Arrange them in the correct sequential order.

Answer any 3 questions from 17 to 20. Each carries 3 scores.

17. Microsporangium is surrounded by four wall layers

a) Name the four wall layers. b) Write the function of these layers.

18. EcoRI is an example of restriction endonuclease enzyme.

a) Name the bacteria from which EcoRI is isolated. b) Explain the naming procedure of EcoRI.

19. Define the following terms

a) Autogamy b) Geitonogamy c) Xenogamy

20. Recombinant DNA technology is a complex process which involves several steps. Write down the major steps in recombinant DNA technology.

11. Why T.H Morgan selected Drosophila for his experiments?

12. Babu argues that if father is of A blood group mother is of B blood group children can only be A, B or AB group..

a) Do you agree with his statement

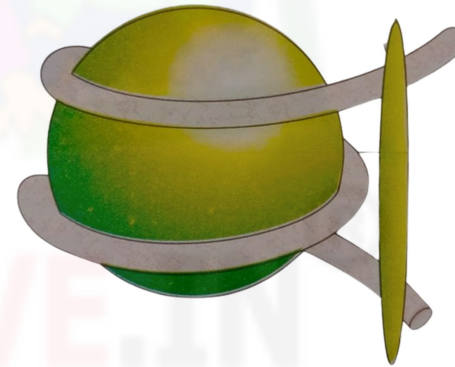
b) Give reason for your answer

13. Differentiate between Linkage and Recombination

14. Complete it

Disorder	Karyotype	Symptoms
Down's Syndrome	45A+XX a
..... b	44A+XXY	Sterile Male, Mental Retardation
Turner's Syndrome c	Sterile Male, Rudimentary ovaries

15. Identify the structure and define. Differentiate between Euchromatin : Heterochromatin.



16. Explain Replicating fork.

Answer any 3 questions from 17 to 20. Each carries 3 score.

17. Differentiate between Spermatogenesis and Oogenesis

18. Suggest some methods to assist infertile couples to have children.

19. Briefly explain Mendelian disorders.

20. Explain Dihybrid cross.

Biology-Zoology

Answer any 3 questions from 1 to 5. Each carries 1 score.

1. Fertilisation takes place in ____

2. Expand RCH and IMR

3. Chromosome theory of inheritance was proposed by ____

4. Dihybrid phenotypic ratio is ____

5. ZZ - ZW Mechanism of sex determination is found in ____

Answer any 9 questions from 6 to 16. Each carries 2 score.

6. When the urine sample of a lady is tested, the presence of HCG is detected.

a) What does the presence of HCG indicate?

b) What is the source of HCG?

7. Sex of a baby is determined by the father not by the mother. Substantiate.

8. What are STIs? Name any 4 STIs other than AIDS.

9. Is sex education necessary in schools? Why?

10. What is blastocyst? What is the fate of trophoblast?

