



MAR IVANIOS COLLEGE (AUTONOMOUS)
THIRUVANANTHAPURAM

Reg. No. :.....

Name :.....

Fifth Semester Career Related B.Sc. Degree Examination, November 2016

First Degree Programme under CBCSS

Core Course – VIII: Biotechnology (for Botany and Biotechnology)

AUBB542: Genetics

Time: 3 Hours

Max. Marks: 80

SECTION – A

*Answer **ALL** the following in a word or one or two sentences.*

1. What are linked genes ?
2. Persons with which blood group are called ‘Universal Donors’ ?
3. Define centimorgan (cM).
4. Define Allele or Allelomorph.
5. Write a common example of Quantitative Trait in man.
6. What are Kappa Particles ?
7. What are ‘Oncogenes’ ?
8. Define ‘Exon’.
9. Who proposed the ‘Double Helical Model of DNA’ ?
10. What is a ‘Constitutive Gene’ ?

(10 × 1 = 10 Marks)

SECTION – B

*Answer any **EIGHT** questions, each in a short paragraph not exceeding 50 words.*

11. What is Klinefelter’s Syndrome ?
12. Discuss about satellite DNA.
13. Explain Plastid inheritance in *Mirabilis*.
14. Define ‘Dihybrid Cross’.
15. Define Quantitative Inheritance.

16. Give short notes on Hemophilia.
17. Explain the significance of 'Rh Factor'.
18. If the blood group of mother and father are A and B groups respectively, what are the possible blood groups of children ?
19. Explain the characteristics of Genetic Code.
20. Explain Y – Linked inheritance.
21. Write a note on Z – DNA.
22. What is a 'recon' ?

(8 × 2 = 16 Marks)

SECTION – C

Answer any SIX questions, each in a paragraph not exceeding 120 words.

23. Explain Transposable genetic Elements.
24. Discuss about Linkage and Crossing Over.
25. Differentiate between Dominant and Recessive Epistasis with suitable examples.
26. Explain Inhibitory Gene Interaction ratio of 13:3 with suitable example.
27. What is gene mapping ? Explain the procedure of gene mapping with respect to two point test cross.
28. Mention the names of different types of RNAs and their functions.
29. Explain the ratio 9:7. What kind of Gene Interaction is this ?
30. Write down the differences between 'Central Dogma' and 'Teminism' or 'Reverse Transcription' ?
31. Explain the genic balance theory of sex determination in *Drosophila*.

(6 × 4 = 24 Marks)

SECTION – D

Answer any TWO questions, not exceeding four pages.

32. Explain DNA replication and the experimental evidence of semiconservative model of replication.
33. Write an essay on Protein Synthesis.
34. Give an account on Mendelian Principles and Mendelian Ratios.
35. Explain Multiple Allelism with the help of suitable examples.

(2 × 15 = 30 Marks)

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