



MAR IVANIOS COLLEGE (AUTONOMOUS)
THIRUVANANTHAPURAM

Reg. No. :

Name :

Sixth Semester Career Related B.Sc. Degree Examination, April 2018

First Degree Programme under CBCSS
Core Course – X: (for Botany and Biotechnology)

AUBB642: Genetics

(only for **Regular** – 2015 Admn.)

Time: 3 Hours

Max. Marks: 80

SECTION – A

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

1. Coincidence.
2. Founder effect.
3. Give the F₂ phenotypic ratio in complementary gene action.
4. Hardy Weinberg equation.
5. Recon.
6. Give the chromosome number in Turner's syndrome.
7. Codons.
8. Holandric genes.
9. Topoisomerase.
10. Mendel's first law.

(10 × 1 = 10 Marks)

SECTION – B

Answer any **EIGHT** questions, not exceeding a paragraph.

11. Write briefly on haemophilia.
12. Differentiate multiple alleles and polygenes.
13. Briefly mention incomplete dominance.
14. What is meant by quantitative inheritance?
15. Comment on role of tRNA in protein synthesis.
16. Differentiate epistasis and hypostasis.
17. Discuss the features of cellular oncogenes.

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18. Mention how linkage differs from independent assortment.
19. What are split genes? List any two features of split genes.
20. Give two examples where the F1 phenotypic and genotypic ratios are identical.
21. Mention any four features of genetic code.
22. Write short notes on genetic drift.

(8 × 2 = 16 Marks)

SECTION – C

Short essay type : Answer any SIX questions.

23. Explain the pattern of inheritance of blood groups in man.
24. Write notes on housekeeping genes and luxury genes.
25. With the help of suitable example explain genic balance theory of sex determination.
26. Explain the genetics of self-sterility in *Nicotiana*.
27. With the help of an example explain inhibitory genes.
28. Point out the major factors influencing gene frequency in a population.
29. How the inheritance of comb pattern in fowls differs from typical Mendelian dihybrid ratio?
30. Comment on Mendel's experiments and point out the reasons for Mendel's success.
31. Mention the characteristic features of Transposons.

(6 × 4 = 24 Marks)

SECTION – D

Long essay type : Answer any TWO questions.

32. Give an account on 'central dogma' and point out in detail the sequence of events associated with it.
33. With the help of two relevant examples explain extranuclear inheritance and discuss how it differs from nuclear inheritance.
34. Describe the structure and replication of DNA.
35. Explain linkage and crossing over and mention their significance in chromosome mapping.

(2 × 15 = 30 Marks)