



MAR IVANIOS COLLEGE (AUTONOMOUS)
THIRUVANANTHAPURAM

Reg. No.:.....

Name:.....

Fifth Semester B.Sc. Degree Examination, November 2016

First Degree Programme under CBCSS

Core Course: Botany – VI

AUBO543: Cell Biology, Genetics and Evolutionary Biology

Time: 3 Hours

Max. Marks: 80

SECTION – A

Write short notes on ALL the following.

1. Polycentric chromosomes
2. Epistasis
3. Polysomes
4. Granular E R
5. Genotypic ratio
6. Barr body
7. Incomplete dominance
8. Pleiotropic genes
9. Retrogressive evolution
10. Turner's syndrome

(10 × 1 = 10 Marks)

SECTION – B

Answer any EIGHT questions, not exceeding one paragraph.

11. Discuss the Lamarckian principles of evolution.
12. Justify 'the law of purity of gametes'.
13. Explain the significance of cytokinesis.
14. What are lamp brush chromosomes ?

15. Mention the functions of mitochondria.
16. Illustrate a monohybrid cross.
17. Heterochromatin & Euchromatin.
18. Back cross & Test cross.
19. XX – XO mechanism of sex determination.
20. Genetic drift.
21. What are complementary genes ?
22. What is the significance of telomere ?

(8 × 2 = 16 Marks)

SECTION – C

*Short essay type : Answer any **SIX** questions.*

23. With a suitable example describe recessive epistasis.
24. Explain polygenic inheritance with an example.
25. Differentiate between parallel and convergent evolution.
26. Describe the mechanism of crossing over.
27. Give an account of structural aberrations in chromosome.
28. With the help of a neat labeled diagram describe the structure of chloroplast.
29. Explain the inheritance of kappa particles in Paramecium.
30. What is nucleosome ? Explain its structure.
31. With reference to ABO blood group explain multiple alleles.

(6 × 4 = 24 Marks)

SECTION – D

*Long essay type : Answer any **Two** questions.*

32. Describe the process of meiotic division in plants. What is the significance of it ?
33. Explain the morphology and chemical organization of eukaryotic chromosomes.
34. With suitable example explain the law of independent assortment.
35. What are sex – linked genes ? Explain inheritance of eye colour in Drosophila.

(2 × 15 = 30 Marks)

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