



**MAR IVANIOS COLLEGE (AUTONOMOUS)**  
**THIRUVANANTHAPURAM**

Reg. No. :.....

Name :.....

**Fifth Semester B.Sc. Degree Examination, November 2016**

**First Degree Programme under CBCSS**

**Core Course: Zoology – III**

**AUZO541: Cell Biology and Molecular Biology**

Time: 3 Hours

Max. Marks: 80

**SECTION – A**

*Answer ALL questions in one or two sentences.*

1. What are nucleosomes ?
2. Mention any two functions of microtubules.
3. Genetic codons are degenerate. What does it mean ?
4. Comment on transformation.
5. Briefly explain endomitosis.
6. What are Okazakifragments ?
7. What are exons ?
8. Mention the significance of superoxide dismutase.
9. Comment on reverse transcription.
10. What is GERL concept ?

**(10 × 1 = 10 Marks)**

**SECTION – B**

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

11. Describe the structure of interphase nucleus.
12. Comment on wobble hypothesis.
13. Give short notes on glyoxisomes.
14. Distinguish between euchromatin and heterochromatin.

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15. What is a synaptonemal complex ?
16. Explain the process of bacterial transduction.
17. Write down the characteristics of genetic code.
18. Comment on chaperons.
19. Mention replication enzymes in prokaryotes and mention their function.
20. Give short notes on excision repair and mismatch repair.
21. Explain chemiosmotic hypothesis.
22. Write the chemical composition of prokaryotic ribosome.

**(8 × 2 = 16 Marks)**

### **SECTION – C**

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

23. What is F – factor ? Mention its role in conjugation ?
24. Describe the major cellular changes that takes place during aging.
25. Explain the modifications of plasma membrane.
26. Discuss the mechanism of signal transduction.
27. Explain the structure and functions of Golgicomplex.
28. What is an operon ? Describe the lac operon concept in the regulation of gene action.
29. Describe the polymorphism of lysosomes.
30. Write down the significance of meiosis.
31. Explain semiconservative model of DNA.

**(6 × 4 = 24 Marks)**

### **SECTION – D**

*Answer any TWO questions, not exceeding four pages.*

32. What are giant chromosomes ? Explain the structure and significance of lamp brush chromosomes.
33. Write two experiments which provide evidence for DNA as genetic material.
34. What is transcription ? Explain the different stages of transcription with necessary illustrations.
35. Write an essay on characteristics of cancer cells and mention the theories behind carcinogenesis.

**(2 × 15 = 30 Marks)**

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