MAR IVANIOS COLLEGE (AUTONOMOUS)
THIRUVANANTHAPURAM

Reg. No. :…………………   Name :………………….

Third Semester B.Sc. Degree Examination, November 2016
First Degree Programme under CBCSS
Foundation Course – II

AUZO321: Methodology and Perspectives of Science and Bioinformatics

Time: **3** Hours   Max. Marks: **80**

SECTION – A

*Answer **ALL** questions in one or two sentences.*

1. Define empiricism
2. What is the resolving power of a microscope ?
3. What is Rf value ?
4. Define mode
5. Comment on test of significance.
6. What is patent ?
7. Expand BRNET
8. Expand NCBI
9. Define proteomics
10. What is molecular phylogenetics ?

                                   (10 × 1 = 10 Marks)

SECTION – B

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

11. Differentiate between scientific theory and scientific law with a suitable example.
12. What is scientific temper ?
13. Differentiate between inductive reasoning and deductive reasoning.
14. Comment on the working principle of bright – field microscope.
15. Explain density gradient centrifugation.
16. What is micrometry ?

17. List the merits and demerits of 'mean' as a 'measure of central tendency'.
18. What is statistical data ? What are the important aspects associated with statistical data ?
19. Comment on null hypothesis.
20. What is plagiarism ?
21. What is INFLIBNET ?
22. Differentiate between PAM and BLOSUM.
23. Comment on the uses of multiple sequence alignment.
24. What is PHYLIP ?
25. Define personalized medicine. Give any two advantages of Personalized medicine.

(**10 × 2 = 20 Marks**)

SECTION – C

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

26. Comment on the principles which form the basis for scientific laws.
27. Differentiate between colorimetry and spectrophometry.
28. Give an account of phase contrast microscope.
29. Comment on the characteristics and uses of Chi – square test.
30. The percentage of water, lipid, protein and other materials are 67%,7%, 5% and 21% respectively in the body of a species of fish. Construct a pie chart to represent this data.
31. Briefly discuss the different forms of scientific misconduct.
32. "Internet is truly a knowledge repository". Justify this statement.
33. What is FASTA ? List the programmes under FASTA
34. Give an account of drug discovery pipeline.

(**6 × 5 = 30 Marks**)

SECTION – D

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

35. Give an account of chromatography and its applications.
36. Describe the various methods employed for presenting scientific data.
37. Write an essay on the popular databases in bioinformatics.
38. Briefly describe the various bioinformatics tools.

(**2 × 10 = 20 Marks**)

∫*∫*∫*∫*∫*∫*∫*∫*∫*∫*∫*∫*∫*