QP Code: P25C019

Reg. No : ....
Name : ....

ST MARY'S COLLEGE (AUTONOMOUS), THRISSUR-20

III SEMESTER (CBCSS - PG) DEGREE EXAMINATIONS, OCTOBER 2025
M.Sc. Biology
BIO3E0902 : OMICS AND MOLECULAR MEDICINE I: PROTEOMICS AND METABOLOMICS
2024 Admission Onwards

Time:3 Hours **Maximum Weightage:30**

Part A

Short answer type questions. Answer ***any four****.Weightage* ***2*** *for each.*
(4x2 = 8 Weightage)

1. What is Metabolomics?
2. Explain PIR.
3. Define Collision Induced Dissociation.
4. Explain computation based approach for metabolic flux study.
5. Discuss the application of protein interaction.
6. Describe the role of Chromatographic techniques in proteomic analysis.
7. How does SILAC differ from iTRAQ?

Part B

Short essay-type questions. Answer ***any four****. Weightage* ***3*** *for each.*
(4x3 = 12 Weightage)

8. Discuss the pros and cons of liquid extraction.
9. Explain the non-spectrometric methods for protein identification.
10. Explain clinical applications of proteomics.
11. Discuss the role of fluxomics in developing seeds.
12. Compare and contrast NMR and MS in terms of sensitivity, resolution and metabolite coverage.
13. Analyse the Protein interactons *in silico.*
14. How does Wobble hypothesis help to reduce the number of required tRNA molecules?

Turn Over

Part C

Essay-type questions. Answer ***any two*** *questions. Weightage* ***5*** *for each.*
(2x5 = 10 Weightage)

15. Explain the types of protein modifications in proteomics.
16. What is meant by protein modelling? Explain different types.
17. Explain the importance of proteiomics in cancer research.
18. Evaluate the statement, “metabolite identification is the bottleneck of untargeted metabolomics”.

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