

Subject Title: **Microbiology and Biological Chemistry**

Prepared by: M Madhavi

Year: I Year

Semester: II Sem

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Unit - I: Biomolecules**Essay Answer Type**

1. Describe briefly about classification of carbohydrates and their importance.
2. What are essential and non essential amino acids? Explain their importance.
3. Describe the structure of proteins and their importance.
4. Explain about classification of lipids.
5. Describe the structure of DNA and RNA.
6. Derive the Michaelis Menten equation.
7. Explain the factors influencing rate of enzyme reactions.

Short answer type

8. Disaccharides.
9. Zwitter ion
10. Isoelectric pH
11. Peptide bond formation
12. Different forms of DNA
13. Phospholipids and glycol lipids
14. Carotenoids and terpenes
15. Classification of enzymes
16. Types of Enzyme inhibition
17. Co enzymes

Unit - II: Bioenergetics**Essay Answer Type**

18. Explain different steps involved in glycolysis process.
19. Describe briefly about TCA cycle/Kreb's/Citric acid cycle

20. Explain about various complexes involved in electron transport chain.
21. Discuss briefly about gluconeogenesis and its significance.
22. Write about transamination and deamination reactions.
23. Discuss briefly about β -oxidation of fatty acids.

Short answer type

24. Oxidative phosphorylation
25. Transamination
26. Deamination
27. Glyoxylate cycle
28. Gluconeogenesis significance

Unit - III: Fundamentals of Microbiology**Essay Answer Type**

29. Describe briefly about bright field microscopy and its applications.
30. Discuss briefly about scanning and transmission electron microscope and their application.
31. Write about outline classification of microorganisms.
32. Explain briefly about disease causing pathogens.
33. Describe the structure and general characters of micro algae and fungi

Short answer type

34. Dark field Microscopy
35. Phase contrast microscopy
36. Fluorescent microscopy
37. General characteristics of bacteria
38. General characteristics of Viruses
39. Mycobacterium
40. Hepatitis

Unit – IV Culture and identification of Microorganisms**Essay Answer Type**

41. Describe briefly about Sterilization methods.

42. Explain bacterial nutrition and growth factors.
43. Discuss briefly about bacterial growth curve and factors effecting growth curve.
44. Write about culturing methods of anaerobic bacteria and viruses.
45. Explain the methods for measurement of bacterial growth, bacterial number and mass.

Short answer type

46. Autoclave
47. Laminar airflow
48. Chemical sterilization methods
49. Macro and micro nutrients
50. Continuous culture
51. Synchronous culture
52. Pure culture and its characteristics

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