

D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1.

BIOMOLECULES

SECTION-A

6 MARKS

1. Define monosaccharide and discuss about the classification of monosaccharides with suitable examples.
2. Illustrate the structure and properties of maltose.
3. Write Define carbohydrate and how they are classified with suitable example?
4. Difference between reducing and non-reducing sugar?
5. Write short note on osazone formation?
6. Give an account on mutarotation?
7. Give a short note on sucrose?
8. Write short notes essential fatty acids with suitable examples?
9. Write an account of classification of lipids with examples?
10. Illustrate the structure and function of phospholipids?
11. Give short note on glycolipids?
12. Write short notes about triglycerols?
13. Write short notes on regulation of glycolysis.
14. Difference between glycogenesis and glycogenolysis.
15. Discuss about the importance of NADPH.
16. Brief short notes on beta oxidation of fatty acids.
17. Write short notes on heteropolysaccharides.
18. Give short notes on sphingomyelins.
19. Illustrate the structure of ergosterol.
20. Write short note essential amino acids?
21. Briefly explain about quaternary structure of protein?
22. Write short notes on globular protein?
23. Give short notes on conjugated protein?
24. Write the chemical properties of amino acids?
25. Discuss about the classification of amino acids based on their polarity?
26. Give short notes on aromatic amino acids.
27. Write about physical properties of amino acids.

28. Brief short notes on primary structure of protein.
29. Give short notes on precipitation of proteins by ammonium sulphate precipitation method.
30. Discuss about the mechanism of transamination.
31. Write about the classification of porphyrins.
32. Illustrate the structure of metalloporphyrins.
33. Write short notes on oxidative deamination.
34. Illustrate the structure of nucleotides?
35. Give short notes on tautomerism?
36. Illustrate the structure of tRNA?
37. Write about the properties of purines and pyrimidines.
38. Give short notes on nucleotides and nucleosides.
39. Illustrate the structure of purine bases.
40. Illustrate the structure of pyrimidine bases.
41. Write about different forms of DNA.
42. Discuss about structure of RNA.
43. Write briefly about the functions of vitamin A.
44. Give a short note on vitamin k.
45. Write about riboflavin.
46. Discuss about the functions of cobalamin.
47. Illustrate the chemistry of biotin.
48. Brief short notes on general functions and classification of minerals.
49. Write short notes on biochemical function of calcium.
50. Write short notes on magnesium.
51. Give short notes on iodine.
52. Brief short notes on potassium.
53. Give an account on selenium.
54. Write about laws of thermodynamics.
55. Give an account of exergonic and endergonic reactions.
56. Give short notes on redox potential.
57. Write short notes of high energy compounds.
58. Define chromatography. Write the principles and classification of chromatographic techniques.

59. Write short notes on entropy and enthalpy.
60. Write short notes on ion exchange chromatography.
61. Write short notes on Gas chromatography.

15 MARKS

1. Define carbohydrate? How they are classified and explain with suitable example?
2. What are called homopolysaccharides? Briefly explain about starch?
3. Explain glycogenesis and its regulation.
4. Discuss about glycogenolysis and write about its regulation.
5. Describe EM pathway.
6. Discuss about biosynthesis of phospholipids.
7. Describe the structure of functions of phospholipids?
8. Illustrate the structure of cholesterol and write its function?
9. Discuss about triglycerols and its properties?
10. Describe how the primary structure of protein can be determined?
11. Discuss about the classification of amino acids with suitable examples?
12. Describe the classification of proteins?
13. Explain secondary structure of proteins?
14. Describe urea cycle and its regulation.
15. Discuss about transamination and its mechanism.
16. Explain about structure and function of haemoglobin.
17. Discuss about purification of proteins.
18. Write an account of structure, function of nomenclature of nucleotides?
19. Discuss about chlorophyll.
20. Explain biosynthesis of purines.
21. Discuss about degradation of pyrimidines.
22. Briefly explain about degradation of purine.
23. Describe about biosynthesis of pyrimidines.
24. Explain structure of DNA?
25. Define RNA and discuss about different types of RNA?
26. Discuss about the sources, functions and deficiencies of vitamin A.
27. Explain in detail about Niacin.

28. Give an account on Ascorbic acid.
29. Discuss about the sources, functions and deficiencies of vitamin D.
30. Explain in detail about Thiamine.
31. Discuss about the sources, chemistry, functions and deficiencies of pyridoxine.
32. Discuss the biochemical function, dietary requirements, sources and absorption of calcium.
33. Briefly explain about sodium.
34. Describe the metabolism of copper, zinc and manganese.
35. Write about the biochemical function, dietary requirement, sources and absorption of phosphorous.
36. Briefly explain about chromium and lead.
37. Write an account of high energy compounds in metabolism.
38. Explain about metabolism of Xenobiotics.
39. Discuss about gel filtration chromatography.
40. Explain in detail about HPLC.
