

**ST. JOSEPH'S COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)  
CUDDALORE – 607 001**

**PG & RESEARCH DEPARTMENT OF BIOCHEMISTRY**

**Subject Name:** Intermediary Metabolism

**Subject Code:** BC405S

**Class:** II B.Sc Biochemistry

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**SECTION – A**

**I. Answer in one sentence**

1. Glycogen synthase.
2. Mention the enzymes present in PDH complex.
3. What is debranching enzyme?
4. Name of the enzymes of urea cycle present in cytosol?
5. Which amino acid is not substrate for transamination?
6. Expand NAD.
7. Define P:O ratio.
8. How many molecules of ATPs are synthesized per NADH oxidation?
9. Which is the key regulatory enzyme of HMP pathway.
10. Which enzyme involved in Succinyl CoA cleavage?
11. What is the major fate of glucose-6-phosphate in the tissue in the well fed state.
12. Which metabolic pathway required for NADPH.
13. Write any two transporter systems in inner mitochondrial membrane.
14. What are Ketone bodies and where it is synthesised?
15. Name the coenzymes required for the de novo synthesis of fatty acids?
16. Which amino acid detoxifies benzoic acid to hippuric acid?
17. What is cephalin?
18. Write the reaction catalysed by HMG-CoA reductase.
19. Define ketosis.
20. What is carnitine?
21. Define protein turn over.
22. What is allopurinol?
23. What is detoxification?
24. Glutathione.
25. Define transamination reaction.
26. Write the function of fatty acid synthase.
27. Mention the significance of Cori cycle.
28. What is meant by free energy?
29. Give an example for amino acid which undergo non oxidative deamination.
30. Give an example for ketogenic amino acid.
31. What is conjugation?
32. Define omega oxidation.
33. Define deamination.
34. Name the purine nucleotides.

35. Name the rate limiting enzyme involved in cholesterol biosynthesis?
36. Who proposed the chemiosmotic theory.
37. Name the uncouplers that blocks ATP synthesis.
38. Acyl carrier protein
39. LCAT
40. Glucogenic amino acid
41. Ribonucleotide reductase.

### **SECTION-B**

42. Write a note on key enzymes involved in glycogen metabolism.
43. Explain shuttle system?
44. Comment on P/O ratio.
45. Differentiate oxidative phosphorylation and substrate level phosphorylation.
46. Give the reaction of TCA cycle.
47. Describe the structure and functions of lecithin.
48. How ketone bodies are formed? Write their significance.
49. What are glucogenic aminoacids? Give examples.
50. Explain transamination reaction with an example.
51. Write the phase II reactions of xenobiotic metabolism.
52. Explain the conversion of ribose sugar to deoxysugar.
53. Give the structure and function of FAS.
54. Write a note on decarboxylation.
55. Explain the structure and function of FMN & FAD.
56. Explain the structure and function of NAD & NADH.
57. Write a note on the biosynthesis of phospholipids.
58. Briefly explain gluconeogenesis.
59. Explain glycogenesis.
60. Write briefly on Glycolysis.
61. Write a note on saturated fatty acid.
62. Explain the regulation of cholesterol biosynthesis.
63. Explain about degradation of fatty acid.
64. Write a note on alpha and omega fatty acid oxidation.
65. Give the illustrated explanation for ketogenic amino acid.
66. Explain decarboxylation.
67. Explain the biosynthesis of purine.
68. Explain the biosynthesis of pyrimidine.
69. Explain the components of electron transport chain.
70. What is transamination? With an example.

### **SECTION-C**

71. Describe glycolysis in aerobic and anaerobic conditions.
72. Explain the citric acid cycle.
73. Explain pentose phosphate pathway.
74. Describe the biosynthesis of fatty acid and their role in metabolism.
75. Write in detail about biosynthesis of cholesterol.
76. Explain the biosynthesis of triglycerides and phosphoglycerides.

77. What is beta oxidation? Explain.
78. Explain the transamination and deamination reaction of amino acid.
79. Describe Urea cycle in detail.
80. Write a note on de nova and salvage pathway.
81. Explain about the biosynthesis of nucleotide coenzyme.
82. Explain the ETC?
83. Write in detail the chemiosmotic theory.
84. Explain the process of gluconeogenesis.
85. Discuss pyrimidine biosynthesis.
86. Describe the mechanism of detoxification in detail.
87. Explain the Phase I & Phase II reaction.
88. Describe the steps of glycogenesis.
89. Explain the biosynthesis of purine nucleotide.