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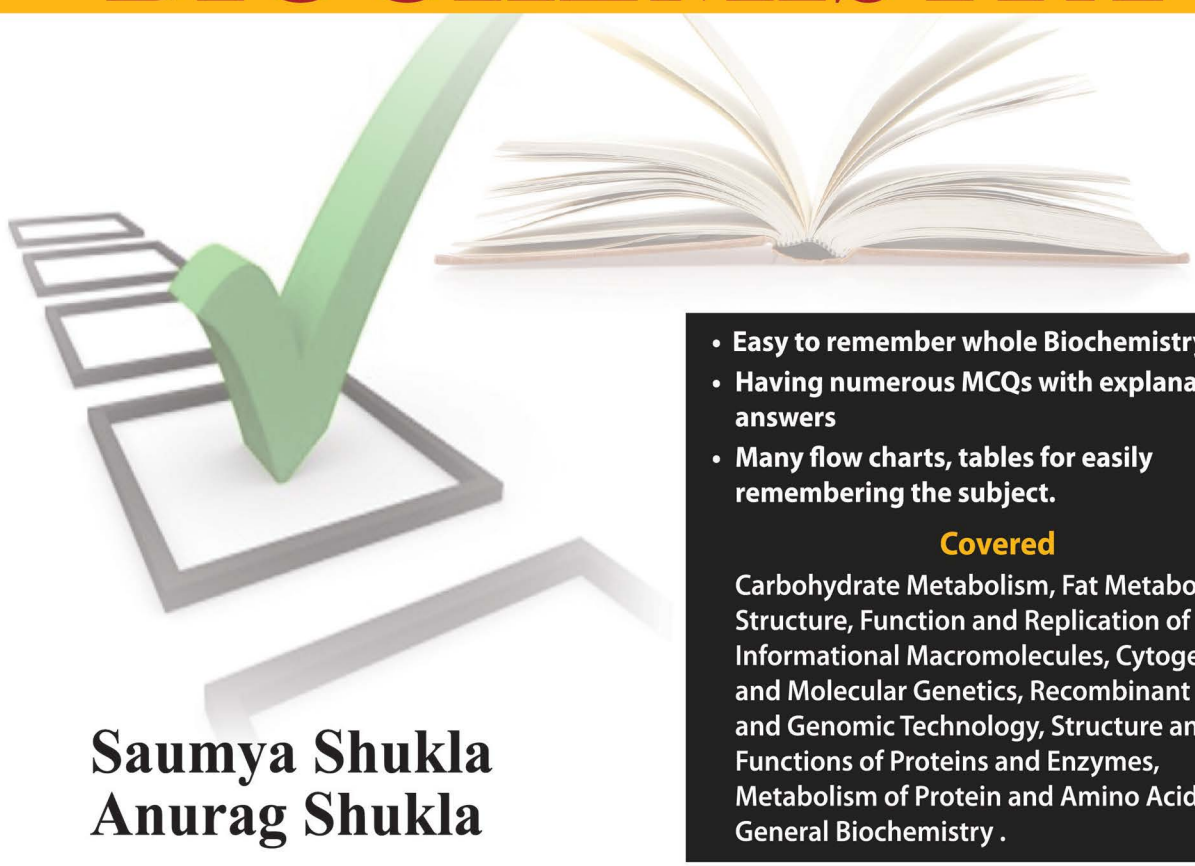
LMR

Last Minute Revision

BIOCHEMISTRY



- Easy to remember whole Biochemistry
- Having numerous MCQs with explanatory answers
- Many flow charts, tables for easily remembering the subject.

Covered

Carbohydrate Metabolism, Fat Metabolism, Structure, Function and Replication of Informational Macromolecules, Cytogenetics and Molecular Genetics, Recombinant DNA and Genomic Technology, Structure and Functions of Proteins and Enzymes, Metabolism of Protein and Amino Acids, General Biochemistry .

Saumya Shukla
Anurag Shukla

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Answers:

Lipids of Physiological Significance

1. **C i.e. Arachidonic acid contain five double bonds** *[Ref: Harpers 28/e P-121-23; Lippincott's 5/e p. 181-82]*
2. **D i.e. Omega-3 fatty acids**
3. **C, B, > A i.e. (Hydrogenated vegetable oils contains Trans fatty acid; Biologically arachidonic acid is essential to life > Polyunsaturated FA is essential for membrane structure)**
4. **D i.e. Hydrogenation decreases TFA** 5. **A i.e. Linoleic acid** 6. **B i.e. Linoleic acid; C i.e. Linolenic acid**
7. **B i.e. Sunflower Oil**
8. **D i.e. Docosahexanoic Acid** *[Ref: Lippincott's 6/e p. 182; Park 16/e p.407; Lehninger 5th/e p. 345, 815-16; Harper 28/e p.122; Vasudevan 6/e p.437]*
9. **D i.e. Alpha linolenic acid** *[Ref: Harper's 27/e P-123; 26/e P- 113, 191]*
10. **A, B, D i.e. Long chain fatty acid (LCFA), Alcohol- sphingosine, Sailic acid**
11. **A i.e. Cell-cell interaction, B i.e. Signal transduction; C i.e. Surfactant; D i.e. Acute inflammatory mediator, E i.e. Activates membrane enzymes** *[Ref: Lehninger 5/e p. 256, 350-55; 829; Chatterjea 7/e p. 45, 58- 61; Vasudevan 6/e p. 81-82; Lippincott 5/e p. 201-2, 209-10, 217]*
12. **A, C, D i.e. Glucose, Sphingosine, Fatty acids**
13. **A i.e. Ganglioside, B i.e. Sphingomyelin, C i.e. Cerabrosides***[Ref: Lippincott's 5/e P-211; Harper's 28/e P-208-9]*
14. **B i.e. Alpha 2 – macroglobulin** *[Ref. Harper 28/e p. 216, 232; 575; Vasudevan 6/e p. 292-300, 335]*

Acylglycerol & Sphingolipid Metabolism

15. **C i.e. Mutation of genes encoding lysosomal hydrolases** *[Ref: Harrison 17/e p- 2452-53; Harper's 27/e P-541]*
16. **D i.e. Wolman disease** *[Ref: Harper 29/e p. 235, 233; Lippincott's 6/e p. 212, 210; Vasudevan 7/e p. 193, 91-93; Chatterjea 8/e p. 11, 50, 63, 424]*
17. **B, C, E i.e. Due to deficiency of enzyme Beta-Gluco-cerebrosidase, Deposition of glucosylceramide, PAS staining positive** *[Ref: Harper 28/e p 210; Harrison17/e p- 2452-54; Robbins 7/e p 163-164; Vasudevan 6/e p.168-69; Chatterjea 7/e p 58-59; Lippincott 5/e p 212; Lehninger 5/ 356]*
18. **A i.e. Niemann-Pick disease** 19. **B i.e. β-glucosidase** 20. **B i.e. Krabbe's disease**
[Ref: Harrison 17/e P 2452-57; Lippincott's 5/e P-208-217; Harper's 28/e P-210, Chatterjea 7/e p. 60, Harrison 16/e p. 2316- 17]
21. **A i.e. Glucocerbrosidase** 22. **B i.e. Niemann pick ds**
23. **A i.e. Tay- sach's disease; B i.e. Gaucher's disease** *[Ref: Harper's 27/e P-215; Lippincott's 3/e P-210]*

Lipid Transport

24. **D i.e. Chylomicrons** *[Ref: Lippincott 5/e p-227-28; Chatterjea 7/e p 419-18; Harper 28/e p 213]*
25. **B i.e. Chylomicrins** *[Ref: Lippincott's 5/e P-227-28]*
26. **A i.e. Chylomicron** 27. **A i.e. Chylomicrons** 28. **C i.e. Chylomicrons**
29. **D i.e. LDL** 30. **B i.e. LDL** 31. **D i.e. LDL**
32. **B i.e. LDL** *[Ref: Harper's 27/e P-218; 26/e P-206, Shinde & Chatterjea: Biochemistry 6/e P- 386]*
33. **C i.e. HDL** 34. **B i.e. HDL**
35. **A i.e. Chylomicron** *[Ref: Harper's 28/e P-213-14; Lehninger 5/e p. 836-37]*
36. **A i.e. HDL** *[Ref: Harper's 27/e p. 238; Lippincott's 4/e p 242- 43]*
37. **A i.e. RNA editing** *[Ref: Harper's 27/e P-218]*
38. **A i.e. Apoprotein B** 39. **A i.e. VLDL**
40. **D i.e. Apo AI** 41. **C i.e. Apoprotein C II inhibits lipoprotein lipase**
[Ref: Harper's 28/e p. 212-15; Chattergea 7/e p. 419-21; Devlin 5/e p. 712; Lippincott's 100, 177, 189, 227 – 34]
42. **B i.e. LDL / HDL ratio** 43. **B i.e. LDL**
44. **B i.e. LDL** 45. **D i.e. It contains Apo-B_4**
[Ref: Harper 28th/ed pg-216; Lehninger 5th/ed pg- 843; Journal of American college of nutrition, Vol 27, No-1, 1-5 (2008) Chattarjea 7th/ed pg. – 374-75; Lippincott 4th/ed pg-234-31]
46. **A i.e. Present only in the extra-hepatic tissues:** *[Ref: Harper29/e p 242, 255-57; Lehninger 5/e p 837-41; Lippincott 5/e p 233-31]*
47. **C i.e. On accumulation in the cell inhibits replenishment of LDL receptors.**
48. **C i.e. Increased blood cholesterol is associated with increased LDL receptors**
49. **C i.e. Apo E and Apo B100**

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50. D i.e. Does not require CII as cofactor
[Ref: Lippincott 4th/ed pg-228-29; Lehninger 5th/ed pg- 837-39; 346, 649; Harper 28th/ed pg-134- 35, 215-16, 232]
51. A i.e. HDL *[Harper's 27/e P-221-223; 26/e P-209, 210; Chatterjea 6/e P- 386]*
52. A i.e. Tendon Xanthoma **53. D i.e. LDL receptor mutation**
54. D i.e. Chylomicrons **55. A i.e. LDL receptor**
56. A i.e. Deficient LDL receptor **57. C i.e. III**
[Ref: Harper's 29/e p. 232; Harrison 18/e p. 3148-49; Lippincott's 4/e p. 178, 229- 232, 380; Chattergea 7/e p. 424 – 27]
58. A i.e. Chylomicron, B i.e. LDL, C i.e. VLDL, E i.e. TG *[Ref. Harrison 16/e P-2288; Harper's 27/e P-239]*
59. B i.e. VLDL *[Ref: Harper's 27/e P-219-220; 26/e P-211-12]*
60. B i.e. Atherosclerosis *[Ref: Harper 27/e p. 239; Lippincott's 4/e p. 237; Robbins 7/e p. 521]*

Cholesterol Synthesis & Excretion

61. A i.e. HMG COA reductase **62. C i.e. HMG-Co-A Synthase**
63. A i.e. Steroid **64. D i.e. Palmitic acid; E i.e. Stearic acid**
[Ref: Lehninger 5/e p 355-60, 831-35; Vasudevan 6/e p 147-52; Chaterjea 8/e p 431-35; Lippincott 5/e p 196-98; Harper 29/e p 210-13, 251-55]
65. E i.e. Cholesterol restricted diet, high fiber diet with low saturated FA to unsaturated FA ratio.
66. C i.e. HMG COA reductase
67. B i.e. Cholesterol *[Ref: Harper's 27/e P-230,236;26/e P-218; Chatterjea 6/e P-374; KDT 5/e P-577]*
68. B i.e Cholic acid; C i.e. Chemodeoxycholic acid. E i.e. Taurocholic acid

Fatty Acid Synthesis

69. D i.e. Fatty acid synthesis *[Ref: Harper's 29/e P-217-24; Lippincott 5/e p. 184-186, 194; Chatterjea 8/e p. 414-419]*
70. D i.e. Fatty acid biosynthesis.
71. C i.e. Fatty acid synthesis **72. A i.e. Fatty acid synthesis** **73. D i.e. NADPH** **74. D i.e. HMP pathway**
75. A i.e. Acetyle CoA Carboxylase; **76. B i.e. Fatty acid synthesis** **77. C i.e. Condensation reaction**
78. A i.e. Freeing of PAN-SH site **79. B i.e. 4 in Ist cycle & 2 in IInd cycle** **80. D i.e. Dehydrogenase**
81. B i.e. Malonyl CoA
82. A i.e. Operates under anaerobic conditions; D i.e. Not a common pathway; E i.e. Pyridoxal-Phosphate & NADPH is required
83. A & C i.e. ER and Mitochondria *[Ref: Lippincott 4th/ed pg- 187; Harper 28th/ed pg- 196, 199; Lehninger- 812-15]*

Triacylglycerol and Phosphoglycerol Synthesis

84. B i.e. Enzyme glycerol Kinase Plays an important role *[Ref: Lippincott/s 4/e p. 181-88, 174- 76 , Harper 27/e p. 226, 209-11]*

β - Oxidation of Fatty Acids

85. C i.e. Carnitine *[Ref: Harper's 28/e P-184-86; Lippincott 4/e p. 191]*
86. C i.e. Carnitine palmitoyl trasferase II is present in mitochondrial matrix
87. B i.e. Propionyl CoA *[Ref: Harper's 27/e P-188-89; 26/e P- 182, 181; Shinde & Chatterjea P-348, 347]*
88. D i.e. 147 *[Ref: Lehninger 5th/e p. 65-57; Harper 28/e p. 191; 27/e p. 189]*
89. B i.e. 129 ATP net; E i.e. 96 ATP from citric acid cycle **90. B i.e. H_2O_2 formed**
91. D i.e. Phytanic alpha oxidase *[Ref: Harper 28th/ed p. 191, 493; Lippincott 4th/ed pg--195; Lehninger 5th/ed pg- 665; Nelson 17/ed pg-2077]*

Eicosanoids

92. B i.e. Cyclooxygenase *[Ref: Harper 29/e p. 224-226]*

Ketogenesis (Ketone Body Formation)

93. B i.e. HMG CoA **94. A i.e. Liver** **95. D i.e. RBCs** **96. C i.e. Acetoacetate** *[Ref: Harper 29/e p 210-14; Lippincott 5/e p 195-97]*
97. D i.e. Malonyl CoA *[Ref: Harper 29/e p 212-14, 247-48; Lippincott 5/e p 330-31, 193-98]*

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98. **A i.e. Usilize fatty acids in Starvation;** **99.** **B i.e. Ketone bodies;** **100.** **B i.e. Ketone bodies**

101. **D i.e. Increased Gluconeogenesis** *[Ref: Ganong 22/e P- 299-301, 342-43, 349- 50; Lehininger 2/e P- 842- 45; Chatterjea 6/e P- 362-65, 465; NMS 3/e P-517; Lippincott's 3/e P-294]*

102. **D i.e. Glycogenesis** **103.** **B i.e. Liver gluoneogenesis increases** **104.** **D i.e. Decrease in serum Proteins** *[Ref: Lippincott 5/e p 321-33; Mark's (2012) p 35-36; Vasudevan 6/e p 107-108; Chattarjea 8/e p 535-35; Ganong 22/e p 350]*

105. **A i.e. Low Km value of hexokinase C i.e. High Km value of glucokinase** **106.** **C i.e. Prolonged Starvation** *[Ref: Lippincott's 3/e P-89, 293; Lahninger 2/e P- 840 – 49]*

107. **A i.e. Ketone bodies; B i.e. Glucose; C i.e. Free fatty acids; D i.e. Creatine phosphate**

108. **A i.e. Alanine** *[Ref: Lippincott 3/e P 294; Lahninger 2/e P 843]*

109. **C i.e. Increased secretion of insulin** *[Ref: Ganong 22/e p. 345-46]*

110. **A i.e. Increase in glucagons / insulin ratio, increased C- AMP & increased blood sugar.** *[Ref: Lehnenger 2/e P- 847- 49; Lippincott 2/e P 297; Ganong 22/e P- 350, 336- 49]*

111. **D i.e. Ketones** *[Ref. Vasudevan 6/e p. 372, 319, 305, 64, 251-50, 288, 279; Lehninger 5/e p. 241; Satyanarayana 3rd/295; 'Practical Biochemistry for Students' by Malhotra 4th/e 43-47, 'Laboratory Manual of Biochemistry' by Chary & Sharma (2004) / 21]*

112. **B i.e. Rotheras** *[Ref: Chatterjea 6/e P-652-60]*

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