

BIOCHEM EXAM QUEST.

1. Structure and classification of amino acids.
2. Bohr effect. Mechanism of Bohr effect.
3. Glycolysis.
4. Irreversible covalent and enzyme-catalyzed inhibition.
5. DNA structure. Modes of replication.
6. Optical properties of amino acids. Fischer and CIP (Cahn-Ingold-Prelog) projections.
7. Effects of 2,3-BPG, CO and CO₂ on oxygen affinity to hemoglobin.
8. Gluconeogenesis.
9. Inhibition of enzyme activity. Reversible and allosteric inhibition.
10. Prokaryotic DNA replication.
11. Protein misfolding. Amyloid and Prion diseases.
12. Mutations related to alteration of nucleotide sequence and trinucleotide repeat expansion.
13. Minor hemoglobins.
14. Factors effecting reaction velocity. Michaelis-Menten equation.
15. Pentose phosphate pathway
16. Protein misfolding. Amyloid and Prion diseases.
17. Collagen. Synthesis of collagen
18. TCA (Krebs/citric acid) cycle.
19. Lipids. Classification and function of lipids.
20. Tertiary and quaternary structures of protein.
21. Elastin. Structure of elastin.
22. Long chain fatty acid oxidation.
23. Lipids. Classification and function of lipids.
24. DNA structure. Modes of replication.
25. Primary and secondary structures of proteins. α -helix and β -sheets, β -bends.
26. Nomenclature of enzymes.
27. Classification of carbohydrates. Isomers, epimers and enantiomers.

28. Mitochondrial beta-oxidation of fatty acids.
29. Eukaryotic DNA replication. Telomeres. Organisation of eukaryotic DNA..
30. Structure and function of myoglobin.
31. Factors effecting reaction velocity. Michaelis-Menten equation.
32. Transport of fatty acids across the mitochondrial membrane. Carnitine shuttle
33. Structure and types of RNA.
34. ETC (electron transport chain). ATP generation.
35. Structure and functions of hemoglobin.
36. Fatty acids. Structure and nomenclature of fatty acids.
37. Ketone body formation and oxidation. Ketogenesis and ketosis.
38. De novo pyrimidine synthesis
39. Degradation of purine nucleotides
40. TAG (triacylglycerol) synthesis.
41. RNA polymerase. Components of RNA polymerase.
42. Synthesis of sphingomyelin.
43. Phospholipids. Structure and classification of phospholipids.
44. Eukaryotic DNA replication. Telomeres. Organisation of eukaryotic DNA..
45. De novo pyrimidine synthesis
46. Structure and classification of amino acids.
47. Transport shuttles for NADH
48. Transcription in prokaryotes.
49. Polysaccharides.
50. Differences of prokaryotic and eukaryotic translation.
51. Irreversible covalent and enzyme-catalyzed inhibition.
52. Protein misfolding. Amyloid and Prion diseases.
53. Polysaccharides
54. Primary and secondary structures of proteins. α -helix and β -sheets, β -bends.
- 55.** Classification of carbohydrates. Isomers, epimers and enantiomers.
56. Ketone body metabolism.

57. Translation in prokaryotes. SD sequence.
58. Transport of fatty acids across the mitochondrial membrane. Carnitine shuttle.
59. Classification of carbohydrates. Isomers, epimers and enantiomers.
60. Factors effecting reaction velocity. Michaelis-Menten equation.
61. Glycogen metabolism
62. Transcription in eukaryotes. Transcription factors.
63. Synthesis of purine nucleotides