

Please check whether you have got the right question paper.

N.B: 1. All Questions are compulsory.

1. **Answer the following**
  - a) Draw the structure of GMP 1
  - b) Name the initiation codon and its respective amino acid 1
  - c) Enlist the components of ETC 1
  - d) Name the shuttle which transports reducing equivalent from cytosol to mitochondria) matrix 1
  - e) Give the net ATP yield after oxidation of palmitic acid 1
  - f) Name two drugs inhibiting cholesterol synthesis; also mention the step which is inhibited 2
  - g) Name two drugs inhibiting translation 2
  - h) Give the significance of Pentose phosphate pathway 2
  - i) Calculate total ATPs formed when two molecules of acetyl CoA are consumed in TCA cycle 2
  - j) Explain why DNA polymerase III is the primary enzyme for replication instead of DNA polymerase I 2
  
2. **a) Give the names and structures of the substrate and product of the following enzymatic reactions (any 2)** 4
  - i)  $\alpha$  –ketoglutarate dehydrogenase complex
  - ii)  $\beta$  – Ketoacyl ACP reductase
  - iii) Glutamine- PRPP amidotransferase
  
- b) Write structures of given substrate and product with name of the enzyme catalysing the reaction (any 2)** 4
  - i) Inosinate to adenylosuccinate
  - ii) Pyruvate to oxaloacetate
  - iii) Acetoacetyl CoA to HMG CoA
  
- c) Differentiate biosynthesis and  $\beta$  - oxidation of fatty acid** 3
  
3. **a) Give the biosynthesis of UTP. Predict the effect of methotrexate on pyrimidine nucleotide synthesis.** 4
- b) Discuss post transcriptional modification in eukaryotes** 4
- c) Give the significance of telomeres and telomerase inhibitors** 3
  
4. **a) Distinguish between oxidative and substrate level phosphorylation** 4
- b) Compare biosynthesis with chemical synthesis of peptides** 4
- c) Draw schematic representation of DNA replication in prokaryotic cell** 3
  
5. **a) Write a note on glycogenolysis** 4
- b) Explain the Preparatory phase of glycolysis** 4
- c) Explain DNA sequencing by Sanger dideoxy method** 3
  
6. **a) Write a note on Salvage pathway and give it significance** 3
- b) Differentiate between prokaryotic and eukaryotic translation** 3
- c) Give steps for synthesis of mevalonate** 3
- d) Describe role of proteases and peptidases** 2