

Please check whether you have got the right question paper.

N.B: 1. All Questions are compulsory.

1. Answer the following

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|---|---|
| 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)

- α –ketoglutarate dehydrogenase complex
- β – Ketoacyl ACP reductase
- Glutamine- PRPP amidotransferase

b) Write structures of given substrate and product with name of the enzyme catalysing the reaction (any 2)

- Inosinate to adenylosuccinate
- Pyruvate to oxaloacetate
- Acetoacetyl CoA to HMG CoA

c) Differentiate biosynthesis and β - oxidation of fatty acid

3. a) Give the biosynthesis of UTP. Predict the effect of methotrexate on pyrimidine nucleotide synthesis.

- Discuss post transcriptional modification in eukaryotes
- Give the significance of telomeres and telomerase inhibitors

4. a) Distinguish between oxidative and substrate level phosphorylation

- Compare biosynthesis with chemical synthesis of peptides
- Draw schematic representation of DNA replication in prokaryotic cell

5. a) Write a note on glycogenolysis

- Explain the Preparatory phase of glycolysis
- Explain DNA sequencing by Sanger dideoxy method

6. a) Write a note on Salvage pathway and give it significance

- Differentiate between prokaryotic and eukaryotic translation
- Give steps for synthesis of mevalonate
- Describe role of proteases and peptidases