Q.P. Code :02230

[Time: Three Hours] **[Marks:70]**

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) α –ketoglutarate dehydrogenase complex

ii) β – 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 β - 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**