

**QP Code : 75818**

**(2½ Hours)**

**[Total Marks : 60**

**Instructions**

1. All questions are compulsory.
2. All questions carry equal marks.
3. Draw diagrams where ever necessary.

Q1. What are G proteins? Describe the G protein coupled receptors and their role in Glycogen metabolism 12M

**OR**

Describe the structure of Insulin and Insulin receptors and the downstream events 12M

- Q2. (A) Explain major and minor groove in DNA and significance of gyrase DNA. 6  
(B) Discuss the discovery of DNA polymerase-I and its functions. 6

**OR**

Q2. (A) Describe the concept of reverse transcription, molecular basis of mutations and direction of replication. 12

- Q3. (A) Discuss RNA polymerase and its roles. 6  
(B) Explain the process of activation of amino acids and the structure of t-RNA. 6

**OR**

Q3. Discuss the process of elongation and termination of RNA chain and add a note on transcription of m-RNA in eukaryotes. 12

Q4. Explain in detail the significance and role of repetitive DNA. 12

**OR**

Q4. Give an full account of operator operon with suitable example 12

Q5 Write notes on any THREE from the following: 12

- (a) Protein phosphorylation, (b) Repressor, (c) Tyrosyl AMP complex,  
(d) Bidirectional replication, (e) protein kinase, (f) eukaryotic gene

**RM-Con. 1244-17.**