

Time: 2 hrs

N.B.: All Questions are compulsory.

Total Marks: 40

- Q1.** (a) Name two pyrimidine bases present in RNA. (01)
 (b) Name two drugs which inhibit topoisomerase. (01)
 (c) Give role of spliceosomes in RNA splicing. (01)
 (d) Name the initiation codon and its respective amino acid. (01)
 (e) Explain how Chloramphenicol and Streptomycin drugs inhibit protein synthesis. (02)
 (f) Enlist all types of eukaryotic DNA polymerases. (02)

- Q2.** (a) Discuss transcription in prokaryotes. (03)

OR

- (a) Give details of promoter regions for initiation of eukaryotic transcription. (03)
 (b) Describe lac-operon. (03)
 (c) Explain Base excision process for DNA repair. (02)

- Q3.** (a) Explain Holliday model for recombination. (03)
 (b) Describe Elongation stage of protein synthesis in bacterial cells. (03)

OR

- (b) Differentiate Initiation of translation between prokaryotic and eukaryotic cells with description of the steps for Initiation. (03)
 (c) With a schematic diagram depict Watson-Crick model for DNA structure. (02)

- Q4.** (a) Write note on telomere and telomerase. (03)
 (b) Explain post-translational modifications. (03)

OR

- (b) Compare solid phase peptide synthesis with biosynthesis. (03)
 (c) What are mutagens? Give an example of chemical and biological mutagens. (02)

- Q5.** (a) Explain the terms: Unidirectional and bidirectional mode of replication. (02)

OR

- (a) Give justification for the statement: 'DNA polymerase III is the principal replication enzyme in E. coli while DNA polymerase II is involved in DNA repair'. (02)
 (b) Discuss SOS DNA repair (02)
 (c) Give the post-transcriptional modifications of mRNA. (02)
 (d) Write a note on Single Nucleotide Polymorphisms. (02)