Duration: 2 Hrs **Total marks: 40**

N.B.: 1. All questions are compulsory
2. Figures to right indicate full marks

Q.1	Answer the following Questions	**Marks**
(a)	Name two purine bases present in RNA.	**1M**
(b)	Give role of Helicase enzyme in replication.	**1M**
(c)	What are the Okazaki pieces?	**1 M**
(d)	What is a genome?	**1 M**
(e)	Give examples of two inhibitors for protein synthesis.	**2 M**
(f)	Mention different types of eukaryotic DNA polymerases giving their role.	**2 M**
Q.2 (a)	Explain initiation step in prokaryotic transcription.	**3 M**
	OR	
(a)	Explain role and mechanism of RNA polymerase in transcription process in detail.	**3 M**
(b)	Write a note on gene activators.	**3 M**
(c)	Explain nucleotide excision process for DNA repair.	**2 M**
Q.3 (a)	Describe rolling circle model of replication.	**3 M**
(b)	Describe the initiation step in the process of translation.	**3 M**
	OR	
(b)	What is the role of mRNA in the process of translation? Discuss codon-anticodon recognition in brief.	**3 M**
(c)	Discuss the structure of DNA with a well labelled diagram.	**2 M**
Q.4 (a)	What is semiconservative DNA replication? Discuss the role of RNA primer in the process of DNA synthesis.	**3 M**
(b)	Differentiate Initiation of translation between prokaryotic and eukaryotic cells with description of the steps for Initiation.	**3 M**
	OR	
(b)	Discuss the solid phase peptide synthesis in detail.	**3 M**
(c)	Enlist different types of mutations giving suitable examples of mutagens.	**2 M**
Q.5 (a)	Define polymorphism and enlist the disease states caused by polymorphism.	**2 M**
	OR	
(a)	Discuss the role DNA helicases in DNA replication.	**2 M**
(b)	Describe the process of mismatch repair in brief.	**2 M**
(c)	Discuss the importance of post translational modifications of proteins.	**2 M**
(d)	Explain bi-directional replication.	**2 M**

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