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School of Biological and Life sciences**Master of Science in Microbiology****Mid Term Examination - Nov 2023****Duration : 90 Minutes****Max Marks : 50****Sem I - P1PT104T - Molecular Biology**General Instructions*Answer to the specific question asked**Draw neat, labelled diagrams wherever necessary**Approved data hand books are allowed subject to verification by the Invigilator*

- 1) What is phosphodiester bond? K2 (2)
- 2) What is transcription, and how does it differ from DNA replication? K1 (3)
- 3) What is meant by the 5' to 3' polarity of DNA replication? K2 (4)
- 4) What is the 5' cap, and why is it added to eukaryotic mRNAs? K2 (6)
- 5) Why is DNA replication considered semi-conservative? Explain the experiments. K3 (6)
- 6) Describe the properties and functions of RNA polymerase I, II, and III in eukaryotic cells. K3 (9)
- 7) What are the common types of damage that DNA can undergo in the cell? K4 (8)
- 8) Brief the function and mechanism of spliceosome. K4 (12)

OR

Draw and explain the clover leaf model of transfer RNA. K4 (12)