

## MSc Sem.-1 Examination

403

MLT

Time : 2-30 Hours]

February-2025

[Max. Marks : 70

Q1A	Write down the differences between prokaryotes and eukaryotes.	7 Marks
Q1B	Write down the functions of the smooth endoplasmic reticulum in detail.	7 Marks
OR		
Q1A	Describe the microfilaments (actin filaments) with structure and function in detail.	7 Marks
Q1B	Write down the functions of the plasma membrane.	7 Marks
Q2A	Explain activation of G1 phase cyclins. Explain the G1 phase in detail.	7 Marks
Q2B	Explain mitotic division phases and its regulation in detail.	7 Marks
OR		
Q2A	How S-phase cyclins are activating? Explain S-phase in detail with its cyclins and CDKs.	7 Marks
Q2B	Write a note on oncogenes with any two examples.	7 Marks
Q3A	Explain the structure and different arms of t-RNA.	7 Marks
Q3B	Write a detailed note on DNA replication in prokaryotes.	7 Marks
OR		
Q3A	Write a detail note on transcription in eukaryotes.	7 Marks
Q3B	Explain translation in prokaryotes in detail.	7 Marks
Q4A	Explain three Mendelian Laws in detail.	7 Marks
Q4B	Write a note on autosomal inheritance with examples.	7 Marks
OR		
Q4A	What is sex-influenced inheritance? Explain it with example.	7 Marks
Q4B	Explain DNA markers and QTL mapping.	7 Marks
<b>Q5</b>	<b>Answer the following questions (Any Seven)</b>	<b>14 Marks</b>
I	What is osmosis? What happens with Red Blood Cells if they are kept in hypotonic solution?	2 Marks
II	What are the lipid rafts?	2 Marks
III	Which modifications on proteins and lipids done by Golgi Apparatus?	2 Marks
IV	What is the full form of ATM and ATR kinases playing role in DNA damage response?	2 Marks
V	What is mitogen and anti-mitogen?	2 Marks
VI	Why DNA replication happens only once during S-phase?	2 Marks
VII	Explain the role of Helicase and SSB in DNA replication.	2 Marks
VII	What is the role of promoter and terminator in a gene?	2 Marks
IX	What is post translation modification? Give any two examples.	2 Marks
X	Define Co-dominance and Over dominance.	2 Marks
XI	Give two examples of X-linked inherited diseases.	2 Marks
XII	Define incomplete dominance and give one example of it.	2 Marks