

MASTER OF SCIENCE (MICROBIOLOGY) (CBCS - 2018 COURSE)
M.Sc. (Microbiology) Sem-I : WINTER- 2022
SUBJECT : GENETICS & MOLECULAR BIOLOGY

Day : Monday

Time : 02:00 PM-05:00 PM

Date : 9/1/2023

W-18585-2022

Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the **RIGHT** indicate **FULL** marks.
 - 3) Draw neat labeled diagrams **wherever** necessary.
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Q.1 Describe the structure of eukaryotic chromosome. **(15)**

OR

Explain switching off/on of upper metabolic pathway and lower metabolic pathway in xenobiotic (toulene) degradation.

Q.2 a) Write principle, working and use of Agarose Gel electrophoresis in DNA studies. **(08)**

b) Describe plasmid as a vector for genomic studies. **(07)**

Q.3 Attempt **ANY THREE** of the following. **(15)**

- a) Describe tRNA as an adapter molecule in transcription.
- b) Elaborate on significance of Pribnow box.
- c) Compare transcription in prokaryotes with transcription in eukaryotes .
- d) Sketch and label DNA replication fork in prokaryotes.
- e) Discuss in short repetitive DNA sequences in eukaryotes.

Q.4 Write short notes on **ANY THREE** of the following. **(15)**

- a) mRNA
- b) Genomic library
- c) Antibiotics affecting DNA polymerization
- d) Transgenic animals
- e) Protein transported into the nucleus

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