



SM – 406

IV Semester B.Sc. Examination, May/June 2018
(CBCS – 2015 – 16 and Onwards /2012-13 and Onwards) (Fresh + Repeaters)
Biotechnology – IV
MOLECULAR BIOLOGY

Time : 3 Hours

Max. Marks : 70

Instruction : Draw *neat* labelled diagrams *wherever* necessary.

SECTION – A

- I. Write short notes on the following. (5×2=10)
- 1) Hfr cells
 - 2) Catabolite repression
 - 3) tRNA
 - 4) SSB
 - 5) Polycistronic mRNA.

SECTION – B

- II. Answer **any four** of the following. (4×5=20)
- 6) Describe mismatch repair mechanism.
 - 7) Explain the structure of prokaryotic gene.
 - 8) Write a note on transposable elements in Drosophila.
 - 9) Describe the events at the replication fork.
 - 10) Write a note on genome organization in chloroplast.

SECTION – C

- III. Answer **any three** of the following. (3×10=30)
- 11) Describe the process of gene regulation in eukaryotes.
 - 12) Write notes on :
 - a) Transformation
 - b) Generalized transduction

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- 13) Give a comparative account of different forms of DNA.
- 14) Describe the process of translation in prokaryotes.
- 15) Give an account of transcription in eukaryotes.

SECTION - D

IV. Answer the following in **one** word or **a** sentence **each**. (10×1=10)

- 16) Name the organism which has RNA as a genetic material.
- 17) What is the significance of 5/cap in eukaryotic mRNA.
- 18) Name the enzyme involved in excision repair.
- 19) Who identified transforming principle in bacteria ?
- 20) Name the scientists who proved semiconservative mode of DNA replication.
- 21) UGA code stands for which aminoacid in mitochondria ?
- 22) What is primer ?
- 23) Give an example for inducible operon.
- 24) Write the complimentary sequence for the template strand 5'TTACCGA3'.
- 25) What is shine-Dalgarno sequence ?