SE – 192

IV Semester B.Sc. Examination, September 2020
(CBCS – 2015-16 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) DNA polymerase.
2) F-plasmid.
3) Catabolite repression.
4) Shine dalgarno sequence.
5) Transposons.

SECTION – B

II. Answer **any four** of the following : **(4×5=20)**

6) Describe conjugation process in bacteria.
7) Give the characteristics of genetic code.
8) Explain photoreactivation DNA repair mechanism.
9) Explain Griffith experiment to prove that DNA as the genetic material.
10) Describe the transposable elements in maize.

SECTION – C

III. Answer **any three** of the following : **(3×10=30)**

11) Describe operon concept of gene regulation in prokaryotes.
12) Explain the major steps involved in translation process.

P.T.O.

13) Write an account on the types of RNA. Discuss their functions.

14) Discuss the post-transcriptional modification process.

15) Write notes on :

a) Theta model of DNA replication

b) Chloroplast DNA.

SECTION – D

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

16) Components of nucleotide.

17) Terminator codon.

18) Peptidyl transferase.

19) λ Phage.

20) Thymine dimer.

21) SSBP.

22) Write the complimentary sequence for the template strand, 5′AACGTTAC3′.

23) Name the inducer of lac operon.

24) Promoter.

25) Name the scientist who discovered jumping genes.