US – 389

IV Semester B.Sc. Examination, May 2017
(F+R)
(CBCS – 2015-16 and Onwards/2012-13 and Onwards)
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) Nucleotides.
2) SOS repair.
3) Central dogma.
4) Introns.
5) Insertional elements.

SECTION – B

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

6) Explain the types and functions of RNA.
7) Describe briefly transduction in bacteria.
8) Give an account of prokaryotic and eukaryotic ribosome:
9) Explain recombination in maize by transposons.
10) Give an account of mRNA splicing in eukaryotes.

SECTION – C

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

11) Explain replication of DNA in prokaryotes.
12) What are the causes of DNA damage ? Explain excision repair mechanism.
13) a) What is genetic code ? Enumerate its properties.
    b) Write a note on prokaryotic RNA-polymerase.

P.T.O.

14) Describe the process of translation in eukaryotes.

15) Write a detailed account of trp operon concept of gene regulation.

SECTION – D

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

16) Name the form of DNA having left handed helix.

17) Who proposed clover-leaf model of tRNA ?

18) Name the protein produced by lac Z-gene.

19) Which is the enzyme that synthesises mRNA in Eukaryotes ?

20) What is core enzyme ?

21) What is translocation ?

22) Name the initiating amino acid in prokaryotes.

23) Which is the enzyme present in ribosome that helps in formation of peptide bond ?

24) What are inverted repeats ?

25) Name the RNA present in 30s subunit of ribosome.