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GS-361

IV Semester B.Sc. Examination, May/June - 2019

BIOTECHNOLOGY - IV

Molecular Biology
(CBCS - 2015 - 16 and Onwards/2012 - 13 and onwards)
(Fresh+Repeaters)

Time : 3 Hours

Max. Marks : 70

Instruction : Draw neat labelled diagrams wherever necessary.

SECTION - A

I. Write short-notes on the following :

5x2=10

1. Cap structure
2. Mismatch repair
3. Wobble hypothesis
4. Lac Operon
5. Insertional elements

SECTION - B

II. Answer **any four** of the following :

4x5=20

6. Describe the method of Excision repair mechanism of DNA.
7. Give an account on the process of transduction in bacteria.
8. Describe the structure and functions of t-RNA with a neat labelled diagram.
9. Explain the structure of mitochondrial DNA.
10. Write notes on experimental proofs of DNA as a genetic material.

P.T.O.



SECTION - C

3x10=30

III. Answer **any three** of the following :

11. What is an Operon ? Explain the regulation of tryptophan operon in detail.
12. Explain the functions of proteins and enzymes involved in the replication of DNA in eukaryotes.
13. (a) Explain briefly the Watson-Crick model of B-DNA.
(b) Write a note on Prokaryotic gene structure.
14. What is translation ? Discuss the process of translation in eukaryotes.
15. Describe the mechanism of transcription in prokaryotes in detail.

SECTION - D

IV. Answer the following in **one** word or **a** sentence each :

16. Subunits of 80S ribosome.
17. Enzyme involved in photoreactivation.
18. P elements
19. Central dogma
20. If 5' TACGGTA 3' is a DNA template strand, then mRNA strand will be

(a) 3' AUGCCAU 5'	(b) 5' AUGCCAU 3'
(c) 5' ATGCCAT 3'	(d) 3' ATGCCAT 5'
21. Synonym codons
22. Cistron
23. F' cells
24. Spliceosome
25. Competent cells