No. of Printed Pages : 2

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

III. Answer **any three** of the following : **3x10=30**

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 : **10x1=10**

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

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