

M. Sc. (Medical Biotechnology) Sem-I (Choice Based Credit System)

WINTER - 2018

SUBJECT: MOLECULAR BIOLOGY

Day : Monday
Date: 29/10/2018

W-2018-1293

Time: 02.00 PM TO 05.00 PM
Max. Marks: 60

N.B:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in the **SEPARATE** answer books.

SECTION-I

Q.1 Define the following (**ANY FIVE**): (10)

- a) ORF
- b) Pseudogenes
- c) Abortive Initiation
- d) Heterochromatin
- e) Klenow fragment
- f) Repressor

Q.2 Answer **ANY TWO** of the following: (10)

- a) Explain mismatch repair mechanism.
- b) How does Ruv system resolve Holliday junctions?
- c) Explain the role of DNA polymerases in *E. coli*.

Q.3 Write short notes on **ANY TWO** of the following: (10)

- a) Nucleosomes
- b) Chromosome banding
- c) Gene cluster and super families

SECTION-II

Q.4 State the role of (**ANY FIVE**): (10)

- a) Amino-acyl tRNA synthase.
- b) GC box.
- c) Guanylyl transferase.
- d) Co-translational translocation.
- e) Shine-Dalgarno sequence.
- f) Transcription factors.

Q.5 Attempt **ANY TWO** of the following: (10)

- a) Explain the role of signal recognition particle in protein targeting.
- b) In what different ways are tails of histones chemically modified? What are the biological consequences of each type of modification?
- c) Describe a typical bacterial promoter. How does sigma factor interact with promoter element?

Q.6 Write short notes on **ANY TWO** of the following: (10)

- a) Gene Imprinting
- b) Lac operon
- c) Role of Ef- Tu and Ef- G in protein synthesis.

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