

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.
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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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