

**M. SC. (MEDICAL BIOTECHNOLOGY) SEM-I (CHOICE
BASED CREDIT SYSTEM) : WINTER - 2017
SUBJECT: MOLECULAR BIOLOGY**

Day: **Friday**
Date: **10/11/2017**

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

W-2017-1049

N.B.:

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of the remaining attempt any **TWO** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION-I

- Q.1** Answer the following (**Any FIVE**) **(10)**
- a) Enlist the genes involved in SOS response.
 - b) Name the proteins involved in site specific recombination.
 - c) What are transcription factors?
 - d) What is a primosome? Enlist its components.
 - e) What is a gene family
 - f) Explain the structure of ribosome with respect to active sites of protein synthesis.
- Q.2** Answer the following: **(10)**
- a) Describe the structures of promoters of RNA polymerase-I, II and III.
 - b) Describe eukaryotic transcription regulation.
- Q.3** Answer the following: **(10)**
- a) Explain the Holliday model for resolution of homologous recombinants.
 - b) Explain the role of histone proteins in gene regulation.
- Q.4** Write short notes on any **TWO** of the following: **(10)**
- a) Excision repair pathway in mammalian cells
 - b) Rec A protein
 - c) Genome mapping

SECTION-II

- Q.5** Give the meaning of any **FIVE** of the following: **(10)**
- a) Epigenetics
 - b) Repetitive DNA
 - c) Pseudogenes
 - d) Codon degeneracy
 - e) Poly (A) tail
 - f) Euchromatin
- Q.6** Answer the following: **(10)**
- a) Explain catabolic repression in lactose operon.
 - b) Explain in detail co-translational translocation of proteins across the membrane of endoplasmic reticulum.
- Q.7** Answer the following: **(10)**
- a) What are splice junctions? Explain their role in splicing.
 - b) Enlist the initiating factors required for initiation of prokaryotic protein synthesis and state their role.
- Q.8** a) How is synthesis of eukaryotic m-RNA initiated? **(10)**

OR

- b) Discuss the molecular events involved in the termination of RNA transcription in prokaryotes.

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