

**M. SC. (MEDICAL BIOTECHNOLOGY) SEM-I (CHOICE BASED
CREDIT SYSTEM) : SUMMER - 2018
SUBJECT: MOLECULAR BIOLOGY**

Day: **Friday**
Date: **13/04/2018**

S-2018-1164

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

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) What is C- value paradox?
 - b) What are activators and enhancers?
 - c) Name three enzymatic activities performed by DNA polymerase-I.
 - d) Name three histone modifications involved in chromatin remodeling.
 - e) Define satellite DNA.
 - f) What is a transcription unit? Enlist the components with their function.
- Q.2** Answer the following: **(10)**
- a) Briefly explain the role of licensing factor in eukaryotic replication.
 - b) Explain the structure and role of telomere.
- Q.3** Answer the following: **(10)**
- a) Explain the "D model" of homologous recombination.
 - b) Discuss the role of mut proteins in repair of prokaryotic DNA.
- Q.4** Write short notes on any **TWO** of the following: **(10)**
- a) Genomic imprinting
 - b) Excision repair systems in *E.coli*
 - c) Transport of proteins to mitochondria

SECTION-II

- Q.5** Give the meaning of any **FIVE** of the following: **(10)**
- a) Heterochromatin
 - b) Semi-discontinuous mode of replication
 - c) Polycistronic mRNA
 - d) Hemi- methylated DNA
 - e) Splicing
 - f) Genetic code
- Q.6** Answer the following: **(10)**
- a) Explain attenuation control of tryptophan operon.
 - b) Diagrammatically represent 5' capping of mRNA. Add a note on the function of 5' cap in initiation of translation.
- Q.7** Answer the following: **(10)**
- a) Explain the structure of prokaryotic RNA polymerase
 - b) Explain inducible operon with reference to lactose operon
- Q.8** a) Write in detail about the process of translation in prokaryotes. **(10)**

OR

- b) Explain the methods used for epigenetic modifications.

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