

BS/2051

BSC (Hons) Biotechnology Sem IV
Molecular Biology –code :BHB17

961/MH

Set 2

M.M.74

Time allowed:3 hrs

Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

Section A

1. What is genetic material? Explain any one experiment that has proved that DNA is a genetic material. (11)
2. Explain the various steps of DNA replication in eukaryotes. (11)
3. Discuss the various causes and types of DNA damage. (11)
4. Explain the mechanism of recombinational repair. (11)

Section B

5. a) Write a short note on Prokaryotic RNA Polymerase.
b) What is the role of sigma factor and promoter in transcription process. (5,6)
6. Explain a) Intron Splicing
b) mRNA capping (5,6)
7. Define operon. Write in detail regulation of gene expression in prokaryotes by giving example of lac operon. (11)
8. Discuss the mechanism of translation of mRNA into proteins in eukaryotes. (11)

Section C

9. Write short notes on the following:
 - i. Charging of tRNA
 - ii. Operon
 - iii. Inducible control
 - iv. Polyadenylation
 - v. tRNA
 - vi. Ribosome assembly
 - vii. Excision repair
 - viii. Primosome
 - ix. Semi conservative replication
 - x. Mutagens
 - xi. Homologous recombination
 - xii. Okazaki fragments
 - xiii. Klenow fragment
 - xiv. RNA Polymerase binding protein
 - xv. Mismatch repair

15X2=30