

Roll No.

92273

**Bachelor of Bio-Technology 4th
Semester (New Scheme)
Examination-May, 2014**

MOLECULAR BIOLOGY

Paper BT-402

Time : 3 hours

Max. Marks : 40

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : Attempt any **five** questions in all. **Q. No.**

1 is compulsory and attempt remaining **four** other questions selecting at least **one** from each Unit.

1. Compulsory Question : 5 × 2 = 10

- (i) Name the enzyme required for RNA primer synthesis and joining of okazaki fragments.

(ii) Who demonstrated the semi-conservative nature of DNA replication ? Describe the experiment.

(iii) Write a note on photo-reactivation.

(iv) What is the role of sigma factor in transcription of prokaryotes.

(v) What is redundancy of codons and what is its significance ?

UNIT - I

2. (a) Who originally worked out the structure of DNA molecule ? Who provided the X-ray diffraction data and who actually built the models ? 3.75

(b) Differentiate between DNA replication process in prokaryotes and that of eukaryotes. 3.75

3. (a) Write note on formation on primosome and replisome. 3.75

(b) Describe DNA replication by rolling circle model with the help of diagram. Give examples of organism exhibiting this.

3.75

UNIT - II

4. Explain in brief the following :

(a) Nucleotide excision repair 3.75

(b) Recombinational repair 3.75

5. Describe the three main mechanism of DNA proofreading and repair. How are they different and how are they similar. What would be the effect of having no repair mechanism on existence of genetic disorder and evolution ? 7.5

UNIT - III

6. (a) Describe in brief processing of pre-mRNA. 3.75

(b) What are different types of RNA ?
Describe the structure of tRNA with the
help of diagram. 3.75

7. Differentiate between transcription process
in prokaryotes and eukaryotes with the help
of diagram. 7.5

UNIT - IV

8. Differentiate between prokaryotic and
eukaryotic translation with the help of
diagram. 7.5

9. Explain in brief the following :

(a) Posttranslational modifications of
proteins. 3.75

(b) Inhibitors of translation. 3.75