Fifth Semester B. Sc. Examination

BIOCHEMISTRY

Paper – II

(Molecular Biology)

Time : Three Hours] [Max. Marks : 50

N. B. : All questions are compulsory and carry equal marks.

1. Describe the process of initiation of DNA replication in E-Coli. 10

OR

(a) Give the experimental proof of semi-conservative nature of DNA replication. 5

(b) Write a note on theta (θ) and rolling circle model of DNA replication. 5

2. Describe the activities of following enzymes in DNA replication :—

(a) DNA polymerase I.

(b) DNA polymerase III. 10

OR

Describe the following with respect to DNA repair :—

(c) Base Excision Repair. 5

(d) Nucleotide Excision Repair. 5

3. Describe in detail the termination process of transcription. 10

OR

Describe the following with respect to transcription :—

(a) Structure and working of E-coli R.NA polymerse in initiation. 5

(b) Elongation process of RNA transcription. 5

4. Give a detailed account of Lac operon. 10

OR

(a) Write a note on trp-operon. 5

(b) Write a note on reverse transcription. 5

5. Answer any **Ten** of the following :—

(i) What are Okazaki fragments ? 1

(ii) Give the role of primase in DNA replication. 1

(iii) What is meant by lagging strand ? 1

(iv) Name the enzyme which can carry out nick translation. 1

(v) What is Klenow fragment ? 1

(vi) What is meant by 'C' value ? 1

(vii) What is a Pribnow box ? 1

(viii) What is meant by abortive initiation of transcription ? 1

(ix) What are weak promoters ? 1

(x) How many enzymes are coded by lac operon ? 1

(xi) Define attenuation. 1

(xii) What type of primer is used by reverse transcriptase ? 1