

B.Sc. T.Y. CBCS Pattern Semester-V
USBCDST-10 (DSE-II) : Biochemistry Paper-II (Molecular Biology)

P. Pages : 2

Time : Three Hours



GUG/W/23/13112

Max. Marks : 50

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- Notes : 1. All questions are compulsory and carry equal marks.
3. Draw well labelled diagrams wherever necessary.

1. Discuss in detail the experiment which proved that DNA replication is semiconservative. **10**

OR

- a) Give the concept of Okazaki Fragment. **2½**
- b) Describe the rolling circle model of replication. **2½**
- c) Write note on "Origin of Replication". **2½**
- d) Describe elongation of replication in E. coli. **2½**

2. Describe in detail base excision repair & nucleotide excision repair of DNA. **10**

OR

- a) Describe Ames test. Give its significance. **2½**
- b) Describe the structure of polymerase I. **2½**
- c) Briefly describe Mut-HLS system in mismatch repair. **2½**
- d) Write in brief about the concepts of C and D value in DNA replication. **2½**

3. Write a detailed note on rho dependent and independent termination of transcription. **10**

OR

- a) Explain determination of length of promoter by DNA footprinting method. **2½**
- b) Write a note on role of Sigma subunit. **2½**
- c) Discuss the role of promoter in initiation of transcription. **2½**
- d) Describe weak & strong promoters. **2½**

4. Write in detail about Shine-Dalgarno sequence and discuss its importance in the selection of initiation codon. **10**

OR

- a) Explain the error correction process in aminoacylation. 2½
- b) Describe Wobble hypothesis in brief. 2½
- c) Write a short note on – Aminoacyl synthetases. 2½
- d) Write in brief about the structure of t-RNA. 2½

5. Solve **any ten** of 12 questions. **10x1**

- a) What is photoreactivation?
- b) Name the enzyme associated with nucleotide excision repair.
- c) What are leading & lagging strands?
- d) Give the consensus sequence of Pribnow box.
- e) What is nick translation?
- f) What is meant by Klenow fragment?
- g) What is ori C?
- h) Define Reverse transcription.
- i) What is the role of sigma subunit in transcription?
- j) What is a transcription unit?
- k) Who proposed the concept of genetic code?
- l) Shine-Dalgarno sequence is rich in purine bases. (True or False).
