

B.Sc. Third Year CBCS Pattern Semester-VI
**USBCDST-14 - Biochemistry Paper-II : Protein Synthesis and
Recombinant DNA Technology**

P. Pages : 2

Time : Three Hours



GUG/W/23/13338

Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.

1. Discuss in detail the Initiation of protein synthesis. **10**

OR

a) Discuss the role and structure of f-met tRNA molecules. **2½**

b) Write a note on ribosome structure. **2½**

c) Discuss post translational modification. **2½**

d) Discuss role of Release factors RF1 and RF2. **2½**

2. Discuss regulation of trp operon. **10**

OR

a) Discuss the lac operon structure. **2½**

b) What is positive regulation? **2½**

c) Discuss transcriptional regulation in λ bacteriophage. **2½**

d) What is regulatory protein? Explain with example. **2½**

3. Discuss in detail pBR322 and pUC18 as vector. **10**

OR

a) What is restriction-modification system. **2½**

b) Discuss homopolymer tail joining. **2½**

c) Write a note on Lambda insertion and replacement vectors. **2½**

d) Give the characteristics of an ideal vector. **2½**

4. Discuss in detail the procedure of polymerase chain reaction. **10**

OR

- a) Discuss the method of DNA fingerprinting. 2½
- b) Write a note on gene therapy. 2½
- c) What is Calcium-phosphate precipitation? 2½
- d) Write a note on blue-white screening. 2½

5. Attempt **any ten** from following. 10

- a) What is A and P site?
- b) Define Charged tRNA.
- c) Which is the initiator codon in prokaryote?
- d) Define operon.
- e) Give one example of DNA Binding domains for regulatory proteins.
- f) Give consensus sequence at –35 region.
- g) What is blunt end?
- h) Define expression vector.
- i) Define shuttle vector.
- j) Give one example of recombinant vaccine.
- k) In Bt cotton Bt stands for----- (fill in the blanks)
- l) Northern blotting is used to detect ----- (fill in the blanks)
