

SUBJECT: PHARMACEUTICAL BIOTECHNOLOGY

Day : Thursday  
Date : 22/11/2018

Time : 10.00 A.M. TO 01.00 P.M.  
Max. Marks : 60

W-2018-4095

**N. B.:**

- 1) Q. No. 1 and Q. No. 5 are **COMPULSORY**. Out of the remaining attempt any **TWO** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

**SECTION-I**

- Q.1** Answer any **FIVE** of the following: (10)
- a) Define plasmid.
  - b) What are start and stop codons?
  - c) Differentiate between tRNA, mRNA and rRNA.
  - d) What is action of Restriction endonuclease?
  - e) What are transcription factors?
  - f) Draw a labeled diagram of double helix.
  - g) Define DNA mutation.
- Q.2** Give a detailed account on protein synthesis in eukaryotic cell. (10)
- Q.3** a) What is PCR? Give process of DNA amplification in PCR. (07)  
b) Write applications of PCR. (03)
- Q.4** Write a note on any **TWO** of the following: (10)
- a) Frame shift mutation
  - b) Replication of lagging strand
  - c) rDNA technology

**SECTION-II**

- Q.5** Answer any **FIVE** of the following: (10)
- a) What is function of baffled flask?
  - b) Give a few enzymes used in food industry.
  - c) What are important parameters for fermentation?
  - d) Define up-stream and down-stream process.
  - e) Draw a labeled diagram of batch fermentor.
  - f) Give three important features of innate immune system.
  - g) Composition of a fermentation media.
- Q.6** What is ELISA? With neat diagram explain sandwich ELISA. (10)
- Q.7** a) Write about techniques of immobilizing enzymes. (06)  
b) Discuss advantages and disadvantages of enzyme immobilization. (04)
- Q.8** Write a notes on any **TWO** of the following: (10)
- a) MHC complex
  - b) Flow cytometry
  - c) Tubular reactor