

SUBJECT: PHARMACEUTICAL BIOTECHNOLOGY

Day : Sunday

Date : 05/05/2019

S-2019-4404

Time: 10.00 A.M. TO 01.00 P.M.

Max. Marks: 60

N.B.

- 1) Q.1 and Q.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 books.
- 4) Draw diagrams wherever necessary.

SECTION – I

- Q.1** Attempt any **FIVE** of the following: (10)
- a) Draw a neat diagram of DNA double helix.
 - b) Give five products of rDNA.
 - c) What is a promoter?
 - d) Explain RNA dependent DNA polymerase.
 - e) Differentiate exo-nuclease and endo-nuclease.
 - f) What are histone proteins?
 - g) In a DNA analysis 35% Adenosine was found, calculate % age of cytosine.
- Q.2** Stepwise describe DNA amplification in PCR. (10)
- Q.3** What is the significance of Millers experiment? Discuss its salient findings. (10)
- Q.4** Write short notes on **ANY TWO**: (10)
- a) Differentiate primer and probe
 - b) Frame-shift mutation
 - c) Bacterial artificial chromosome

SECTION – II

- Q.5** Attempt any **FIVE** of the following: (10)
- a) Applications of proteinase in industry.
 - b) What are applications of Penicillinase?
 - c) Enlist factors affecting rate of enzyme reaction.
 - d) Give examples of extremophiles.
 - e) Draw and label diagram of a fluidized bed reactor.
 - f) What is single cell oil?
 - g) What is antigen?
- Q.6** Describe principles of flow-cytometry. (10)
- Q.7** What are monoclonal antibodies? Write a note on its application. (10)
- Q.8** Write short notes on **ANY TWO**: (10)
- a) Site directed mutagenesis
 - b) Differentiate batch fermenter and bioreactor
 - c) Down-stream process

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