T.Y.B.PHARM. SEMESTER-VI (2011 Course) : SUMMER - 2019
SUBJECT: PHARMACEUTICAL BIOTECHNOLOGY
(INCLUDING MOLECULAR BIOLOGY)

Day: Sunday Time:- 10.00 A.M. TO 01.00 P.M.
Date: 05/05/2019 Max Marks:80

S-2019-4453

N.B:

1) Q.1 and Q.5 are **COMPULSORY.** Out of remaining answer any **TWO** Questions from each section.
2) Figures to the right indicate **FULL** marks.
3) Answer to each section should be written in **SEPARATE** answer book.

SECTION-I

Q.1 Answer any **FIVE** of the following: **(10)**

a) Explain DNA ligation.
b) Draw life cycle of T4 phase.
c) Enlist differences between mRNA & tRNA.
d) What are start and stop codons?
e) Define a mutation.
f) Draw a neat labeled diagram of DNA helix.
g) Write applications of restriction endonucleases.

Q.2 **a)** Describe in detail the process of translation and transcription. **(08)**
b) Write a brief note on central dogma of molecular biology. **(07)**

Q.3 Discuss role of rDNA technology in production of therapeutic proteins. Outline the process of production of recombinant insulin. **(15)**

Q.4 Write note on **ANY THREE** **(15)**

a) DNA replication
b) cDNA
c) Agarose gel electrophoresis
d) Conjugation in bacteria

SECTION-II

Q.5 Answer any **FIVE** of the following: **(10)**

a) What is an inoculum?
b) Enlist a few extremophiles.
c) Draw a labeled diagram of a stirred - tank reactor.
d) What is a point mutation?
e) Differentiate between a fermentor & bioreactor.
f) What is protein modeling?
g) Write the Industrial application of protease.

Q.6 Define what enzymes are and discuss various factors affecting enzyme reaction. **(15)**

Q.7 What is immobilization of enzyme and whole cell? Give different methods to achieve enzyme immobilization. **(15)**

Q.8 Write note on **ANY THREE** **(15)**

a) Mutagenesis in strain improvement
b) Lyophilization
c) Down–stream processing
d) Plug-flow reactor

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