7th Semester Regular Examination 2018-19
MEDICAL & PHARMACEUTICAL BIOTECHNOLOGY
BRANCH : BIOTECH
Time : 3 Hours
Max Marks : 100
Q.CODE : E146
Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.
The figures in the right hand margin indicate marks.

Part- I

Q1   Short Answer Type Questions (Answer All-10)   **(2 x 10)**

a) What is proteomics?
b) What do you mean by Red Biotechnology
c) What is genetic disease? Explain with examples.
d) What is germline gene therapy?
e) What is DNA chip?
f) Differentiate between drug affinity and selectivity.
g) What is ELISA?
h) What is toxicogenomics?
i) Discuss the role of HAT medium in the selection of hybrid cells.
j) Why does drug response vary?

Part- II

Q2   Focused-Short Answer Type Questions- (Answer Any EIGHT out of TWELVE)   **(6 x 8)**

a) What is microarray technique? How it can be used to differentiate a normal cell from a diseased one?
b) What is ribozyme? Write its importance.
c) Write a short note on ribosome editing?
d) What do you mean about 2D electrophoresis? Discuss about iso-electric focusing ?
e) What is gene therapy? Write different types of gene therapy.
f) What is antisense therapy? Write the methods of antisense therapy.
g) Write the role of virosomes in drug targeting.
h) What is protein engineering? Write different methods of protein engineering and its relation to drug development.
i) Discuss about working principle and applications of MALDI-TOF
j) What is glucose-electrode biosensor? Write its principle and applications.
k) What are monoclonal antibodies? Write the method of their production and applications.
l) In a 1000 litre fermentor, 1.0 kg of antibiotics of molecular weight of 17,000 D manufactured after harvesting of the cells. If each cell contains 2800 molecules of such antibiotic, calculate the total number of bacterial cells required ?

Part-III

Long Answer Type Questions (Answer Any TWO out of FOUR)

Q3   What do you mean by vaccines. Write its type, advantages and limitations. Discuss construction, administration and mechanism of action of DNA vaccines   **(16)**

Q4   What are antibiotics ? How semi-synthetic penicillin is produced industrially?   **(16)**

Q5   Define downstream processing. Briefly describe the various steps in downstream processing. Schematically represents the production of any one hormone by genetically engineered microbes.   **(16)**

Q6   Discuss in details about the role of proteomics in drug development.   **(16)**