Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.PHARM(NEW)/SEM-6/PT-610B/2012

2012

ADVANCED PHARMACEUTICAL BIOTECHNOLOGY

Time Allotted : 3 Hours *Full Marks* : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : $10 \times 1 = 10$

i) Restriction endonucleases is known as

a) DNA cutting enzyme b) DNA joining enzyme

c) both (a) and (b) d) none of these.

ii) pBR322 is a type of

a) plasmid vector b) cosmid vector

c) bacteriophages d) shuttle vectors.

iii) Zoo blotting technique is also known as

a) northern blotting b) southern blotting

c) western blotting d) none of these.

iv) Which of the following is a type of recombinant vaccines ?

a) Hepatitis *B* b) BCG

c) Meningitis d) All of these.

v) To establish a genomic library for human, the vector used is

a) *E.coli* b) Herpes simplex virus

c) HIV d) none of these.

vi) The most common plasmid vector used in genetic engineering is

a) PBR 328 b) PBR 322

c) PBR 325 d) PBR 330.

vii) Gene is segment of

a) RNA b) DNA

c) RNA or DNA d) both (a) and (b).

viii) Genetically engineered bacteria are being used in commercial production of

a) melatonin b) testoterone

c) human insulin d) thyroxine.

ix) Structural bioinformatics is useful in

a) cloning b) sequencing

c) PCR d) drug design.

x) Nanotechnology refers to dealing with particle with characteristic sizes of

a) 1 μm b) 10 mm

c) 1 cm d) none of these.

xi) GM crops had raised issues related to

a) ethics b) grazing animals

c) evolution d) all of these.

xii) *r*DNA technology

a) is regulated by governmental agencies

b) is not regulated

c) runs in good faith

d) none of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. Define *c*DNA. Explain its role in recombinant DNA technology. 1 + 4

3. a) Differentiate between DNA finger printing and DNA foot printing.

   b) Explain the role of RLPFs in biotechnological studies.

   2½ + 2½

4. Discuss the key factor associated with optimal PCR.

5. What are the types of Restriction Endonuclease enzymes ? Why only type-II is used in gene cloning ? 2 + 3

6. Write a short note on Biosensor and Biocheap. 2½ + 2½

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. Discuss the method of commercial production of insulin by *r*DNA technology.

8. a) What are transgenic plants ?

   b) Discuss the role of transgenic plants in improvement of crop yield and quality with suitable examples.

   c) What are the goals of biotechnological improvements in crops ? 1 + 9 + 5

9. What is DNA vaccine ? With schematic diagram only, represent the steps of PCR. Discuss the role of recombinant DNA technology in the production of pharmaceuticals.

3 + 5 + 7

10. a) Define the term Bioinformatics.

    b) What are Proteomics and Genomics ?

    c) Write the steps involved in the sequential analysis of genes. 2 + 6 + 7

11. What is genetic library ? How is it developed ? What are their applications ? How it is different from *c*DNA library ?

2 + 7 + 3 + 3

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