Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.Pharm/SEM-6/PT-609/2010

2010

PHARMACEUTICAL BIOTECHNOLOGY AND INDUSTRIAL MICROBIOLOGY

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) The antibody which is associated with type 1 hypersensitivity reaction is

      a) IgE b) IgG

      c) IgM d) all of these.

   ii) Streptokinase is also termed as

      a) Fibronolysin b) Catalase

      c) Coagulase d) Hyaluronidase.

   iii) Which part of the soil is used as the source of organism producing antibiotics ?

      a) Horizon *A* b) Horizon *B*

      c) Horizon *C* d) Horizon *D*.

iv) Which of the following is predominant in seromucous secretion ?

a) IgA b) IgM

c) IgD d) IgG.

v) Aminopenicillic acid is prepared from penicillin sps. by

a) Acylase

b) Penicillin acylase

c) Pencillinone

d) None of these.

vi) Transfer of genes from one cell to another by a bacteriophage is known as

a) Conjugation b) Transduction

c) Transformation d) None of these.

vii) Hybridoma cell is

a) fusion of *Ab* producing cell with myeloma cell

b) fusion of two myeloma cells

c) fusion of two normal cells

d) none of these.

viii) *c*-NDA is produced from

a) *t*-RNA b) *m*-RNA

c) *r*-RNA d) None of these.

ix) ECo R1 cleaves its specific recognition site in a DNA

a) asymmetrically

b) symmetrically

c) producing blunt ended fragments

d) none of these.

x) Class II MHC Molecule presents antigen to

a) TH cell b) T-cytotoxic cell

c) B-cell d) none of these.

xi) Example of live bacterial vaccine is

a) Tuberculosis b) Smallpox

c) Cholera d) Typhoid.

xii) The main ingredient used for fermentative production of beer is

a) corn b) barley

c) rice d) wheat.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. Write briefly about gene cloning and its industrial application.

3. Write down the main factors required to design a fermentation process.

4. How will you determine the amount of an antigen present in a sample by ELISA ?

5. What are the advantages of biotransformation over chemical transformation ?

6. Explain, 'All immunogens are antigens but all antigens are not immunogens'.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. With a flow diagram, describe the fermentative production of penicillin.

8. a) What is recombinant DNA technology ? What is a plasmid ? What is a vector ?

   b) Describe the characteristics of a plasmid vector.

   c) Write a short note on hypersensitivity reactions.

   (1 + 1 + 1) + 5 + 7

9. What is enzyme immobilization ? Give the techniques of immobilization of enzymes ? What are the factors affecting enzyme kinetics. Write a short note on 'streptokinase'.

   2 + 7 + 3 + 3

10. Give the outline of manufacturing process of beer with special emphasis on raw material required for fermentative production of beer and different steps involved for fermentative beer production.

11. Define active and passive immunization. Outline the manufacturing process of cholera and BCG vaccines. How will you standardize vaccine formulation ? What is toxoid ?

    2 + 4 + 4 + 3 + 2