



Name :

Roll No. :

Invigilator's Signature :

**CS/B.Pharm(Old)/SEM-6/PT-609/2011
2011**

**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 × 1 = 10

i) Which of the following micro-organisms is used for
Vitamin B₁₂ standardization (assay) ?

- | | |
|-------------------|-------------------|
| a) S. aureus | b) S. typhi |
| c) L. leishmannii | d) None of these. |

ii) Transfer of genes from one cell to another by a
bacteriophage is known or

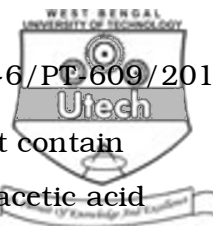
- | | |
|-------------------|-------------------|
| a) conjugation | b) transduction |
| c) transformation | d) none of these. |

6513

[Turn over



- iii) Streptokinase is a proteolytic enzyme derived from
- a) streptococci
 - b) penicillinase
 - c) staphylococci
 - d) urokinase.
- iv) Antibodies which are found in tears, saliva and mucous membrane, are
- a) IgG
 - b) IgM
 - c) IgA
 - d) IgF.
- v) PBR 322 is a
- a) cloning vector
 - b) R-plasmid
 - c) Type of bacteriophage
 - d) None of these.
- vi) The basis of assay of antibiotics by microbial process is
- a) growth restriction
 - b) growth exhibition
 - c) growth inhibition
 - d) none of these.
- vii) Penicillin inhibits
- a) cell wall synthesis
 - b) cell membrane synthesis
 - c) DNA synthesis
 - d) protein synthesis.
- viii) T-lymphocyte is associated with
- a) Humoral immunity
 - b) Cell-mediated immunity
 - c) Non-specific immunity
 - d) None of these.



- ix) Production medium for penicillin-G must contain
- a) Phenoxyacetic acid b) Phenylacetic acid
 - c) both of these d) none of these.
- x) After a foreign tissue graft, immunosuppressant drugs are administered to suppress
- a) cell mediated immunity
 - b) humoral immunity
 - c) non-specific immunity
 - d) none of these.
- xi) Which of the following statements is correct ?
- a) All antigens are immunogens
 - b) All immunogens are antigens
 - c) All antibodies are immunogens
 - d) All of these are wrong.
- xii) Restriction endonuclease is an
- a) DNA-ase b) Protease
 - c) Lipase d) None of these.

GROUP – B

(Short Answer Type Questions)

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

2. Describe the characteristics of plasmid vector.
3. Briefly explain the screening of soil for antibiotic producing organism.
4. What are the advantages of biotransformation over chemical transformation ?
5. Write a short note on immunofluorescence.
6. Classify hypersensitivity reactions.



GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.

3 × 15 = 45

7. Describe the different stages for Industrial production of Beer. What are different types of fermenter used. How would you prevent the corrosion for fermenter ?
6 + 4 + 5
8. Give the flow diagram for Penicillin production briefly describing different stages. Why is the mutant strain preferred for production ? How is the mutation done ?
9 + 3 + 3
9. a) Describe the techniques of immobilization of enzymes and also indicate the factors affecting enzyme kinetics.
b) Write a short note on amylase.
7 + 5 + 3
10. a) Describe the manufacturing process of Diphtheria vaccine.
b) What are the different control tests that are required for immunological products ?
c) How will you store the immunological products ?
d) What are the conditions when passive immunization are required ?
e) Compare between active immunity and passive immunity.
4 + 3 + 2 + 3 + 3
11. a) How will you determine the type of blood group of a person using the principle of antigen-antibody reaction ?
b) Describe the generation of humoral and cell mediated immunity.
c) Schematically represent the structure of immunoglobulin G (IgG).
4 + 8 + 3