



Name :

Roll No. :

Invigilator's Signature :

CS/B.PHARM(NEW)/SEM-6/PT-609/2013

2013

**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 enzyme does not produce sticky ends
 - a) *EcoRI*
 - b) *EcoRV*
 - c) *PstI*
 - d) All of these.
- ii) *Penicillinase* producing micro-organism is
 - a) *Penicillin notatum*
 - b) *Bacillus subtilis*
 - c) *Penicillin chrysogenum*
 - d) *Staphylococcus aureus*.



- iii) *Micrococcus luteus* is used for testing of
- a) Ampicillin b) Erythromycin
c) Tetracycline d) Doxycycline.
- iv) Which of the following is predominant in seromucous secretion ?
- a) IgA b) IgD
c) IgM d) IgG.
- v) Schick test is for detection of
- a) scarlet fever b) diphtheria
c) typhoid d) tuberculosis.
- vi) The enzyme involved in fragmentation of DNA
- a) DNA Polymerase
b) DNA ligase
c) Restriction Endonuclease
d) Reverse Transcriptase.
- vii) PBR322 is a
- a) cloning vector b) R-plasmid
c) type of bacteriophage d) none of these.
- viii) *Bacillus megaterium* is the microorganism used to produce
- a) Vitamin A b) Vitamin B
c) Vitamin B₁₂ d) Vitamin C.

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(Short Answer Type Questions)

2. What is DNA library ? How is it different from cDNA library ?
3. What do you mean by "Enzyme immobilization" ? Explain and enumerate the various advantages and disadvantages of enzyme immobilization.
4. What are the different types of ELISA ? Explain with diagram of any one type of ELISA. 1 + 4
5. Write short note on any two of *the* following :
 - a) Hyalurodinase
 - b) Streptokinase
 - c) Streptodornase.
6. Write a short note on clonal selection model for antibody production.



GROUP – C

(Long Answer Type Questions)

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

7. What is gene therapy ? Haptens have the property of antigenicity but not immunogenicity. Explain. With proper diagram describe the process of gene transfer in micro-organism by specialized transduction ? $5 + 3 + 7$
8. Write the steps involved in penicillin production by fermentation. What precautions are to be adopted in the process for monitoring production ? $10 + 5$
9. Classify immunity and discuss in detail about Hummoral immunity and Cell Mediated Immunity. What is Major Histocompatibility Complex ? $10 + 5$
10.
 - a) What is "Hybridoma technology" ?
 - b) Describe the various steps involve in preparation of monoclonal antibody by Hybridoma technology.
 - c) How 'HAT' media help in selective growth of Hybridoma cells ?
 - d) Why murine monoclonal antibodies cannot be employed for therapeutic purpose for more than 10 days ? $2 + 6 + 4 + 3$
11. What is the concentration of alcohol in different beverages ? Explain the production procedure of whiskey. $5 + 10$

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