PHARMACEUTICAL BIOTECHNOLOGY & INDUSTRIAL MICROBIOLOGY
(SEMESTER - 6)

CS/B.Pharm/SEM-6/PT-609/09

1. .....
Signature of Invigilator

2. .....
Signature of the Officer-in-Charge

Reg. No. | | | | | | | | | | | | | | |

Roll No. of the Candidate | | | | | | | | | | | | | | |

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CS/B.Pharm/SEM-6/PT-609/09

ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

PHARMACEUTICAL BIOTECHNOLOGY & INDUSTRIAL MICROBIOLOGY (SEMESTER - 6)

Time : 3 Hours] [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

FOR OFFICE USE / EVALUATION ONLY

Marks Obtained

	Group – A										Group – B			Group – C				
Question Number																	***Total Marks***	***Examiner's Signature***
Marks Obtained																		

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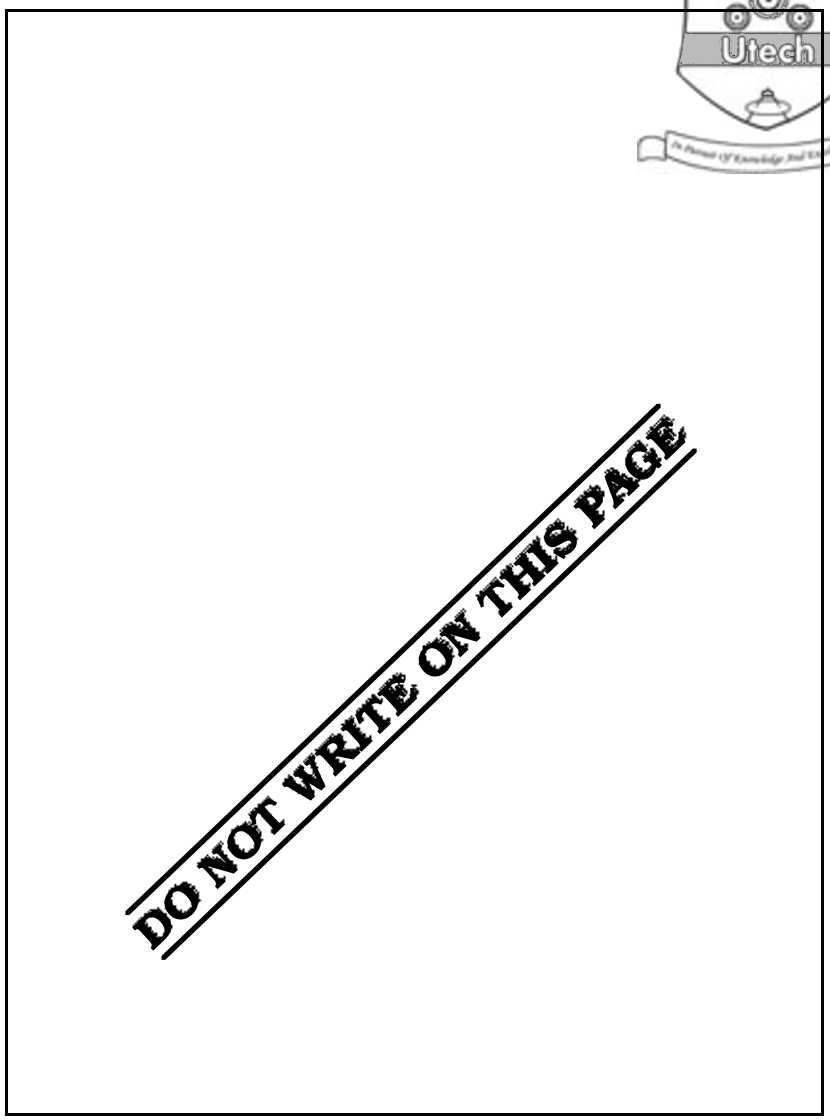
Head-Examiner/Co-Ordinator/Scrutineer

6909 (17/06)



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GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : 10 ∞ 1 = 10

i) The technique commonly used to estimate the concentration of plasma proteins is

a) double immunodiffusion b) simple immunodiffusion

c) Immunodiffusion d) ELISA. ☐

ii) Immunoglobulins (antibodies) are basically

a) Lipoproteins b) Phospholipids

c) Glycoproteins d) Nucleoproteins. ☐

iii) The bacterium responsible for common souring & curding of milk is

a) Lactobacillus b) Aspergillus

c) Streptococcus lactis d) Clostridium. ☐

iv) Penicillin, an antibiotic is produced by

a) Penicillium chrysogenun b) P. glacum

c) P. Patulum d) P. griseofulvin. ☐

v) Enzyme kinetics is based on

a) Law of mass action b) Gibbs free energy

c) Law of equilibrium d) Order of reaction. ☐

vi) The break down of fibrin is catalyzed by

a) Plasmin b) Renin

c) Urokinase d) Ptyalin. ☐

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

a) IgA b) IgM

c) IgD d) IgG. ☐

viii) The basis of assay of antibiotics by microbial process is

a) growth restriction b) growth exhibition

c) growth inhibition d) none of these. ☐

ix) Antibiotics can be produced on a large scale by

a) fermentation process b) semi-synthetic process

c) synthetic process d) all of these. ☐

x) For most immunological products the optimum storge temperature is

a) just above the freezing point b) not above 10°C

c) between 10°C to 20°C d) both (a) & (b). ☐

xi) Streptokinase is a proteolytic enzyme derived from

a) Streptococci b) Staphylococci

c) Penicillinase d) Urokinase. ☐

xii) Vaccines are administered to provide

a) naturally acquired active immunity

b) naturally acquired passive immunity

c) artificially stimulated active immunity

d) all of these. [ ]

xiii) The lymphocyte derived from bursal lymphocyte (*B*-cells) is responsible for

a) cell mediated immunity

b) passive immunity

c) humoral immunity

d) none of these. [ ]

GROUP – B

(Short Answer Type Questions)

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

2. Write short notes on active immunity & passive immunity.

3. Write short notes on streptokinase.

4. All immunogens are antigens but all antigens are not immunogens." Explain with reasons.

5. What are the different steps involved in the design of a fermentor ?

6. How do you get antibiotic producing organism from soil ?

GROUP – C

(Long Answer Type Questions)

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

7 a) What do you mean by 'Enzyme Immobilization' ? Explain.

b) Explain the Immobilization of Bacteria & Plant cells.

c) Enumerate the various advantages & disadvantages of enzyme immobilization.

d) Give a brief description of the four types of methods of immobilization of enzymes. 2 + 4 + 3 + 6

8. Discuss the various steps involved in the commercial production of any *two* of the following antibiotics :

a) Benzyl penicillins (Penicillins G)

b) Streptomycin

c) Tetracyline

9. a) How would you explain protoplast fusion ?

b) Describe the various aspects of the following :

i) Spontaneous fusion

ii) Induced fusion.

c) Discuss any two of the following drugs produced by the help of Biotechnology :

i) Alteplase

ii) Humulin

iii) Humatrope

iv) Hepatitis *B*. 3 + 6 + 6

10. Microbial transformation has great advantage over chemical transformation. Explain. What are the different types of biotrasformation reaction ? Give some examples of steroid biotransformation. 6 + 5 + 4

11. What do you mean by hypersensitivity reactions ? Name the four major types of hypersensitivity reactions. Discuss them. 1 + 4 + 10

12. Describe the fermentative production of alcohol with appropriate diagram.

END