	Utech
Name:	
Roll No.:	A special (VX society 2nd Explant)
Invigilator's Signature :	

CS/B.Pharm(N)/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:

 $10 \times 1 = 10$

- i) Lager Beer is
 - a) Bottom fermented beer
 - b) Top fermented beer
 - c) Middle fermented beer
 - d) None of these.
- ii) All are methods of enzyme immobilization 'on' support except
 - a) adsorption
- b) entrapment
- c) cross-linking
- d) covalent binding.

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iii)	Single stranded	DNA	that	is	converted	from	an	m-RNA
	template is					100		

a) r-DNA

b) c-DNA

c) 2-DNA

- d) all of these.
- iv) An example of "delayed hypersensitivity" is
 - a) contact dermatitis
 - b) arthus reaction
 - c) both of these
 - d) tissue graft rejection.
- v) Determination of base sequences in DNA strand is
 - a) gene synthesis
- b) gene mapping
- c) gene sequencing
- d) gene probe.
- vi) Break down of fibrin is catalyzed by
 - a) Plasmin
- b) Renin

c) Rennin

- d) Ptyalin.
- vii) Which of the following enzymes does not produce sticky ends?
 - a) EcoRI

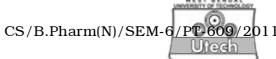
b) EcoRV

c) PstI

- d) All of these.
- viii) The storage condition for lyophilized vaccine is
 - a) <-20°C

- b) $2^{\circ} 8^{\circ}C$
- c) room temperature
- d) none of these.
- ix) Example of vaccine made from metabolic products is
 - a) Diphtheria
- b) Cholera
- c) Whooping cough
- d) Polio.

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- x) Penicillin, an antibiotic is produced by
 - a) Penicillium chrysogenum
 - b) P. glacum
 - c) P. patulum
 - d) P. griseofulvin.
- xi) Which of the following is predominant in mucous secretion?
 - a) IgA

b) IgM

c) IgD

- d) IgG.
- xii) Streptomyces olivacens is the micro-organism used to produce
 - a) Vitamin A
- b) Vitamin B
- c) Vitamin B_{12}
- d) Vitamin B_6 .

GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following.

 $3 \times 5 = 15$

- 2. Write a short note on streptokinase.
- 3. How will you determine the amount of "Antigen" or "Antibody" present in a sample of blood by the method of "RIA"?
- 4. What are the factors affecting the enzyme kinetics? Explain them in briefly.
- 5. Write down the different steps involved in Transduction.
- 6. Write a short note on the raw materials required for the fermentative production of Beer.

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(Long Answer Type Questions)

Answer any three of the following



- Microbial transformation has great advantage over chemical transformation. Explain. What are the different types of Biotransformation reactions? Give some examples of steroid
- biotransformation. 6 + 5 + 4
- 8. Discuss the various steps involved in the commercial production of any *two* of the following antibiotics. $7\frac{1}{2} + 7\frac{1}{2}$
 - a) Benzyl Penicillin
 - b) Streptomycin

7.

- c) Tetracycline.
- 9. a) What are the monoclonal antibodies?
 - b) What is the purpose of hybridoma technology?
 - c) How do you select a myeloma cell and produce monoclonal antibody by hybridoma technology?
 - d) What are the applications of monoclonal antibody?

2 + 3 + 7 + 3

10. Write an account on gene cloning by Polymerase Chain Reaction. How is immunological tolerance developed?

10 + 5

11. Describe the method of manufacturing and quality control of a killed bacterial vaccine with proper example. $7\frac{1}{2} + 7\frac{1}{2}$

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