

**B. PHARM.
SIXTH SEMESTER
PHARMACEUTICAL BIOTECHNOLOGY
BP605T [SPECIAL REPEAT]
[USE OMR SHEET FOR OBJECTIVE PART]**

Duration : 3 hrs.

Full Marks : 75

SET
A

(PART-A: Objective)

Time : 30 min.

Marks : 20

Choose the correct answer from the following:

1×20=20

- Which of the following immunoglobulins are secretory and present in the milk?
 - IgG
 - IgM
 - IgA
 - IgE
 - The immobilized enzyme produced by microencapsulation technique provides
 - An extremely large surface area
 - Smaller surface area
 - High amount of solvent
 - Relatively smaller surface area
 - Which of the following is the process of converting sugar into alcohol?
 - oxidation
 - bleaching
 - fermentation
 - pasteurization
 - What type of ELISA is often used for detecting the presence of antibodies in a patient's blood?
 - Indirect ELISA
 - Direct ELISA
 - Competitive ELISA
 - Sandwich ELISA
 - In the production of the Hormone-Insulin using rDNA technology, the formed recombinant DNA is introduced into
 - Bacteria
 - Fungi
 - Yeast
 - Virus
 - Type IV hypersensitivity is also called as
 - Immediate hypersensitivity
 - cytotoxic hypersensitivity
 - Immune complex hypersensitivity
 - Delayed hypersensitivity
 - Vaccine should be stored at what temperature?
 - 0-4 Degree Celsius
 - 2-6 Degree Celsius
 - 0-8 Degree Celsius
 - 2-8 Degree Celsius
 - The percentage of immunoglobulin IgG in blood is.
 - 80%
 - 3%
 - 60%
 - 0.03%
 - Which hypersensitivity reactions are T cell mediated?
 - Type IV
 - Type III
 - Type I
 - Type II

10. What is the purpose of the wash step in ELISA ?
a. To add more enzymes to the reaction b. To dilute the sample
c. To label the antigens d. To remove unbound molecules
11. What is the name of the enzyme commonly used in ELISA for signal generation ?
a. Alkaline phosphatase b. Tag polymerase
c. RNA polymerase d. DNA Polymerase
12. What is the purpose of denaturing the DNA fragment in a southern blot ?
a. To make it easier to handle b. To break the hydrogen bonds and separate the strands
c. To destroy the DNA d. To add a radioactive label
13. The PCR technique was developed by?
a. Karry Mullis b. Kohler
c. Milstein d. Boyer
14. Plasmid is the circular piece of DNA present in?
a. Virus b. Fungi
c. Bacteria d. Algae
15. In fermentation, What does the term 'substrate' refer to ?
a. End product of fermentation b. Microbial population
c. Raw material being converted d. The microorganism used
16. ELISA (enzyme-linked immunosorbent assay) allows for rapid screening and quantification of the presence of _____ in a sample.
a. amino acid b. DNA
c. antigen d. protein
17. The specificity of an antibody is due to?
a. Its valence b. The heavy chains
c. The Fc portion of the molecule d. The variable portion of the heavy and light chain
18. Which organism used for the production of penicillin antibiotic?
a. Penicillium notatum b. Aspergillus niger
c. Bacillus cereus d. Bacillus cereus
19. The molecular scissors which cut DNA at specific sites are :
a. plasmids b. Fusogenic agents
c. inoculum d. Restriction enzymes
20. The first step in the PCR is called as
a. Annealing b. Denaturation
c. Extension d. Priming

PART-B :Descriptive

Time : 2 hrs. 30 min.

Marks : 35

[Answer any seven (7) questions]

1. Explain the production of hormone insulin by r DNA technology. 5
2. Classify immunity. Write the difference between immune stimulation and immune simulation. 1+4=5
3. Explain the production of penicillin G by Fermentation technology with a neat labelled flow chart. 5
4. Describe ELISA with its application. 5
5. Describe the southern blot test. 5
6. Describe the production and uses of lipase. 5
7. Explain polymerase chain reaction with applications. 5
8. Explain the structure and function of immunoglobulins. 5
9. Write in detail three different vectors used in genetic engineering 5

PART-C: Long type questions

[Answer any two (2) questions]

1. Describe the production of monoclonal antibody by hybridoma technology with its application. 10
 2. What are biosensors ? explain the types with pharmaceutical applications. 1+9=10
 3. Explain different methods of enzyme immobilisation with their advantages and disadvantages. 10
- -- --