SET B

B. PHARM.
SIXTH SEMESTER
PHARMACEUTICAL BIOTECHNOLOGY
BP605T

[USE OMR SHEET FOR OBJECTIVE PART]

Duration : 3 hrs. **Full Marks : 75**

(PART-A: Objective)

Time : 30 min. **Marks : 20**

Choose the correct answer from the following: ***1×20=20***

1. What is the name of the enzyme commonly used in ELISA for signal generation ?
   a. Alkaline phosphate
   b. Tag polymerase
   c. RNA polymerase
   d. DNA Polymerase

2. 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

3. The PCR technique was developed by?
   a. Karry Mullis
   b. Kohler
   c. Milstein
   d. Boyer

4. Plasmid is the circular piece of DNA present in?
   a. Virus
   b. Fungi
   c. Bacteria
   d. Algae

5. 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

6. 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

7. 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

8. Which organism used for the production of penicillin antibiotic?
   a. Penicillium notatum
   b. Aspergillus niger
   c. Bacillus cereus
   d. Bacillus cereus

9. The molecular scissors which cut DNA at specific sites are :
   a. plasmids
   b. Fusogenic agents
   c. inoculum
   d. Restriction enzymes

10. The first step in the PCR is called as
    a. Annealing
    b. Denaturation
    c. Extension
    d. Priming

11. Which of the following immunoglobulins are secretory and present in the milk?
    a. IgG
    b. IgM
    c. IgA
    d. IgE

12. The immobilized enzyme produced by microencapsulation technique provides
    a. An extremely large surface area
    b. Smaller surface area
    c. High amount of solvent
    d. Relatively smaller surface area

13. Which of the following is the process of converting sugar into alcohol ?
    a. oxidation
    b. bleaching
    c. fermentation
    d. pasteurization

14. What type of ELISA is often used for detecting the presence of antibodies in a patient's blood?
    a. Indirect ELISA
    b. Direct ELISA
    c. Competitive ELISA
    d. Sandwich ELISA

15. In the production of the Hormone-Insulin using rDNA technology, the formed recombinant DNA is introduced into
    a. Bacteria
    b. Fungi
    c. Yeast
    d. Virus

16. Type IV hypersensitivity is also called as
    a. Immediate hypersensitivity
    b. cytotoxic hypersensitivity
    c. Immune complex hypersensitivity
    d. Delayed hypersensitivity

17. Vaccine should be store at what temperature?
    a. 0-4 Degree Celsius
    b. 2-6 Degree Celsius
    c. 0-8 Degree Celsius
    d. 2-8 Degree Celsius

18. The percentage of immunoglobulin IgG in blood is.
    a. 80%
    b. 3%
    c. 60%
    d. 0.03%

19. Which hypersensitivity reactions are T cell mediated?
    a. Type IV
    b. Type III
    c. Type I
    d. Type II

20. 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

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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

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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**

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