

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

**SET
A**

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. The first Restriction nuclease was discovered by,
a. Hamilton Smith in 1980
b. Hamilton Smith in 1960
c. Hamilton Smith in 1970 ✓
d. Hamilton Smith in 1950
2. The first experiment on r-DNA technology was performed by,
a. Alexander Fleming
b. Boyer and Cohen ✓
c. Watson and Crick
d. Southern
3. PBR-322 was propped by,
a. James Watson and Crick
b. James Smith ✓
c. Bolivar and Rodriguez
d. Hamilton Smith
4. The molecular weight of RES-I enzyme is,
a. 8 lakh daltons
b. 6 lakh daltons
c. 10 lakh daltons
d. 4 lakh daltons ✓
5. Restriction endonuclease enzymes are suitable for
a. Cutting a DNA
b. joining a DNA
c. Cutting and joining a DNA
d. None of the above.
6. The production of insulin by r-DNA technology was first started in the year
a. 1960
b. 1940
c. 1980
d. 1970 ✓
7. The term biotechnology was introduced by
a. Karl ereky
b. Hammilton Smith ✓
c. Walksman
d. Leuispastuer
8. Immobilization technique is suitable for
a. Proteins ✓
b. Amino acids
c. Enzymes
d. Steroids
9. Biosensor is an
a. Analytical device ✓
b. Physical device
c. Chemical device
d. All of the above

10. The cell mediated immune response depends on
 a. Basophils
 c. Lymphocytes ✓
 b. Monocytes
 d. Chromocytes
11. Immunoglobulin is also called as
 a. Antigen
 c. Antigen and antibody
 b. Antibody ✓
 d. None of the above
12. The major histocompatibility complex is a special group of
 a. Enzymes
 c. Amino acids
 b. proteins ✓
 d. Glycosides
13. Class-II molecules are involved in
 a. Passive immunity
 c. Active immunity ✓
 b. Cell mediated immunity ✓
 d. All of the above
14. BCG vaccine can be obtained from
 a. Fungi
 c. Virus ✓
 b. Bacteria
 d. Actinomyces
15. Western blotting technique is used to identification of
 a. DNA
 c. Protein ✓
 b. RNA
 d. None
16. In electrophoresis, DNA will migrate towards
 a. Positive electrode
 c. Both
 b. Negative electrode
 d. None
17. Loss or deletion of single nucleotide or nucleotide pair, then this type of mutations are called
 a. Point mutation
 c. Spontaneous mutation
 b. Multiple mutation
 d. others
18. The agents which cause mutation is called as
 a. Micribial biotransformation
 c. Mutagens
 b. ELISA
 d. None
19. A small, circular and extra chromosomal DNA which can replicate independently called as
 a. Plasmid
 c. Nucleus
 b. Gene
 d. Chromosome
20. The cell which doesn't contain nucleus membrane
 a. Eukaryotic cell
 c. Both
 b. Prokaryotic cell
 d. None

(PART-B : Descriptive)

Time : 2 hrs. 30 min.

Marks : 35

[Answer any seven (7) questions]

- | | |
|--|---------------|
| 1. What is Protein engineering? What are the main approaches of protein engineering? | 1+4=5 |
| 2. Describe in brief about cloning vector? ✓ | 5 |
| 3. Write application of genetic engineering in medicine. ✓ | 5 |
| 4. Write about cellular and humoral immunity. ✓ | 5 |
| 5. Classify and describe about the classes of immunoglobulin. | 5 |
| 6. What is fermentation? Explain the different types of fermentation. | 1+4=5 |
| 7. Discuss the principle involves in ELISA. Write about indirect ELISA. | 2.5+2.5
=5 |
| 8. What are the blood products? Write about whole human blood. ✓ | 2+3=5 |
| 9. Write about southern blotting technique. ✓ | 5 |

(PART-C: Long type questions)

[Answer any two (2) questions]

- | | |
|---|--------|
| 1. What is DNA shuffling? Explain different steps involved in DNA shuffling? | 2+8=10 |
| 2. Explain in detail about preparation, description, labelling, and standards of BCG vaccine? | 10 |
| 3. Define mutation. Write the Types of mutation. Write about point mutation. | 10 |

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