

**T. Y. B. Pharm. Sem V**

**Pharmaceutical Biotechnology (Theory)**

**CBCS Syllabus**

**Practice Questions& Answer Key**

1. Which of the following immunoglobulins are secretory and present in the milk?

A: IgG

B: IgM

C: IgE

D: IgA

2. 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

3. The class of antibodies, which can cross placenta is

(a) IgD

(b) IgA

(c) IgG

(d) IGM

4. Name the class of immunoglobulin which takes part in hypersensitivity reaction?

a) IgG

b) IgE

c) IgA

d) IgM

5. 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

6. Which of the following is considered as a disadvantage to the adsorption method of immobilization?

A. It is possible to separate and purify the enzymes while being immobilized

B. The enzymes are not usually deactivated by adsorption

C. The adsorption is a reversible process

D. State of immobilization is very sensitive to solution pH, ionic strength and temperature

7. In which of the techniques enzyme and polymer are bridged by the use of bi-functional reagent.

A: Covalent cross-linking

B: Adsorption

C: Physical entrapment

D: Microencapsulation

8. Which biosensors work on the principle of change in mass \*

A: Optical

B: Calorimetric

C: Colorimetric

D: Piezoelectric

9. Glucose Biosensor is an example of .....biosensor \*

A: Thermal

B: Optical

C: Amperometric

D: Conductometric

10. Which biosensors work on the principle of change in mass \*

A: Optical

B: Calorimetric

C: Colorimetric

D: Piezoelectric

11. Plasmid is the circular piece of DNA present in \*

A: Virus

B: Fungi

C: Bacteria

D: Algae

12. The PCR technique was developed by \*

A: Kary Mullis

B: Kohler

C: Milstein

D: Boyer

13. Introduction of recombinant DNA into the bacterial cell by using current is called \*

A: Transformation

B: Electroporation

C: Transformation

D: Transduction

14. 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

15. Name the type of culture which is prepared by inoculating directly from the tissue of an organism to culture media?

a) Primary cell culture

b) Secondary cell culture

c) Cell lines

d) Transformed cell culture

16. What is a cell line?

- a) Multilayer culture
- b) Transformed cells
- c) Multiple growth of cells
- d) Sub culturing of primary culture

17. Which of the following is the true characteristics of a normal cell?

- a) Anchorage independent
- b) Continuous cell lines
- c) have a finite number of cell lines
- d) No contact inhibition

18. B cells that produce and release large amounts of antibody are called: \*

- A: Memory cells
- B: Basophils
- C: Plasma cells
- D: Killer cells

19. Type IV hypersensitivity is also called as

A: Immediate hypersensitivity

B: Cytotoxic hypersensitivity

C: Immune complex hypersensitivity

D: Delayed hypersensitivity

20. Which hypersensitivity reactions are T cell mediated? \*

A: Type IV

B: Type III

C: Type I

D: Type II

21. Which of the following is considered an autoimmune disease?

A: Agammaglobulinemia

B: AIDS

C: SCID

D: Rheumatoid Arthritis

22. A positive tuberculin test is an example of \*

A: Delayed type hypersensitivity

B: Acute contact dermatitis

C: Type I hypersensitivity

D: Eczema

23. Naturally acquired active immunity would be most likely acquired through which of the following processes? \*

A: Vaccination

B: Drinking colostrum

C: Natural birth

D: Infection with disease causing organism followed by recovery.

24. Which of the following antibodies is predominantly present in tears, saliva and mucous

(a) IgM

(b) IgG

(c) IgE

(d) IgA



25. Antigen binding sites are present in

(a) Fab regions of an antibody

(b) F<sub>c</sub> region of an antibody

(c) only in the light chain

(d) only in the heavy chain

26. Which enzyme is used to join together two different types of DNA molecules?

a) ligase

b) endonuclease

c) exonuclease

d) protease

27. Which of the following enzymes in bacteria are responsible for restricting the growth of viruses?

a) restriction endonuclease

b) topoisomerase

c) gyrase

d) protease

28. Excision and insertion of a gene is called

- a. Biotechnology
- b. Genetic engineering
- c. Cytogenetics
- d. Gene therapy

29. The first clinical application of gene therapy over a 4 year old girl was for

- a. Adenosine deaminase deficiency
- b. Adenosine deficiency
- c. Growth deficiency
- d. Adenine deficiency

30. Which of the following is the first transgenic crop?

- A. Flax
- B. Tobacco
- C. Plastic
- D. Cotton

31. The first transgenic plant to be produced is

- a. Brinjal
- b. Tobacco
- c. Rice
- d. Cotton

32. Southern blotting is

- a. Attachment of probes to DNA fragments
- b. Transfer of DNA fragments from electrophoretic gel to a nitrocellulose sheet
- c. Comparison of DNA fragments to two sources
- d. Transfer of DNA fragments to electrophoretic gel from cellulose membrane

33. Restriction enzymes were discovered by

- A. Smith and Nathans
- B. Alexander Fleming
- C. Berg
- D. Watson and Crick

34. RFLP stand for

A. Restriction fragment length polymorphism.

B. Restriction length polymerase.

C. Restricted fragment live polymorphism.

D. Rapid fragment length polymorphism.

35. Chain termination is a type of

A. Sequencing

B. Vector generation.

C. Antibiotic production

D. Gene manipulation

36. In which of the technique enzyme and polymer are bridged by the use of bi-functional reagent

A: Covalent cross-linking

B: Adsorption

C: Physical entrapment

D: Microencapsulation

37. The most commonly employed cross – linked polymer is the

A. Polyacrylamide gel

B. Collagen

C. Celluloses

D. Resin

38. For more complex reactions immobilized\_\_\_\_\_will be used

A: Cell

B: Enzyme

C: Both A and B

D: RNA

39. Which medium is used for the production of Penicillin using immobilized cells

A.1% peptone medium

B.glucose medium

C.Yeast extract medium

D.LB broth

40. Home blood glucose sensor works on which principle?

A) electro-physiological

B) electrochemical

C) physio-chemical

D) chemical

41. Antibodies are

A. Prostaglandndins

B. Steroids

C .lipoprotein

D .glycoprotein

42. Interferons are

A. Antibiotic protein

B. Antiviral protein

C. Antigen protein

D. All of the above

43. The class of antibodies, which can cross the placenta is

a.IgD

b.IgA

c.IgG

d.IgM

44. Very low dose of antigen may induce

a. hypersensitivity

b immunological ignorance

c. low zone tolerance

d. low zone immunity

45. Which type of hypersensitivity reaction is auto-immunity

a. type –I

b. type II

c. type III

d. type IV

46. Which of the following scientists created the first bioinformatics dataase

a. Dayhoff

b. Richard michael

c. Michal durbin

d. Perason

47. The identification of drug through the genomic study is called

- a. Pharmacogenomic
- b. Pharmacogenetics
- c. Genomics
- d. Chemoinformatic

48. Proteomics refers to the study of

- a. set of proteins in a specific region of the cell
- b. biomolecules
- c. set of proteins
- d. the entire set of expressed protein in the cell.

49. The process of finding the relative location of genes on a chromosome is called

- a. gene tracking
- b. genome walking
- c. chromosome walking
- d. genome mapping



50. The term “invitro” is the Latin word which refers to

- a. within the lab
- b. within the glass
- c. outside the lab
- d. outside the glass

**ANSWERS**

1	D	11	C	21	D	31	B	41	D
2	D	12	A	22	A	32	B	42	B
3	C	13	B	23	D	33	A	43	C
4	B	14	A	24	A	34	A	44	C
5	A	15	A	25	A	35	A	45	B
6	D	16	D	26	A	36	A	46	A
7	A	17	C	27	A	37	A	47	A
8	D	18	C	28	B	38	A	48	D
9	C	19	D	29	A	39	B	49	D
10	D	20	A	30	B	40	B	50	B