

**M.Sc. II Semester Degree Examination, September/October - 2022****BIOTECHNOLOGY****21BTH2S2L : BIOPHARMACEUTICAL TECHNIQUES**

Time : 1 Hour

Maximum Marks : 30

1. What is informed consent in a clinical trial ?
 - (a) The subjects do not know which study treatment they receive
 - (b) Patients injected with placebo and active doses
 - (c) Fake treatment
 - (d) Signed document of the recruited patient for the clinical trial procedures
2. How many people will be selected for phase I trial ?
 - (a) The whole market will be under surveillance
 - (b) 300-3000 people
 - (c) 20-300 people
 - (d) 20-50 people
3. What does FDA stand for ?
 - (a) Federal Department of Drug Administration
 - (b) Food and Drug Act
 - (c) Food and Drug Administration
 - (d) Federal Drug Association
4. The first step in the drug discovery process is :
 - (a) Lead Modification
 - (b) Lead Identification
 - (c) Lead Validation
 - (d) Lead Optimization
5. In which phase pharmacodynamics and pharmacokinetics of a drug are studied ?
 - (a) Phase I
 - (b) Phase II
 - (c) Phase III
 - (d) Phase IV
6. Which of the following process involves the determination of the three-dimensional structure of a protein and representing it graphically and mathematically on a computer ?
 - (a) Irrational design
 - (b) Directed evolution
 - (c) Rational design
 - (d) Natural evolution



7. Antigen is an important constituent of the vaccines, to avoid contamination and increase the immune response, a component such as an adjuvant/stabilizer is added during the manufacturing process of a vaccine.
Name the least commonly used adjuvant used in vaccine development.
- (a) Formaldehyde (b) Aluminium sulfate
(c) Potassium aluminium sulfate (d) Aluminium hydroxide
8. The first scientifically approved vaccine was :
- (a) Oral polio vaccine
(b) Smallpox vaccine
(c) MMR vaccine (measles, mumps and rubella)
(d) Tetanus vaccine
9. Numerous biotechnology industries are fast-tracking the development of vaccines for COVID-19.
Which of the following statement is true regarding the stages of vaccine development ?
- (a) Animal studies are performed to see the safety and effectiveness of vaccine candidate
(b) Phase 1/2 clinical studies are conducted to see the safety of the candidate vaccine in humans
(c) Phase 3 clinical studies are conducted to see the efficacy of the candidate vaccine in humans
(d) All of the above
10. The full form of CMI is :
- (a) Cell Medium Immunoglobulin (b) Cell-Mediated Immunity
(c) Cyst Marked Infection (d) Cellular Medium Infection
11. Which immune cells are generally used in the treatment of cancer using adaptive immunotherapy ?
- (a) Mast cells (b) Dendritic cells
(c) Neuronal cells (d) Malignant cells
12. Angiogenesis is the process of formation of :
- (a) Cancer cells (b) Blood vessels (c) Tissues (d) Immune cells
13. What is alternative name for freeze drying ?
- (a) Lyophilisation (b) Cold pasteurization
(c) Irradiation (d) Liposuction



14. What is the main advantage of annealing ?
(a) It is done to achieve large ice crystals
(b) It is done to achieve small ice crystals
(c) It is done to achieve microscopic ice crystals
(d) It is done to achieve mixture of large and small ice crystals all
15. Who discovered freeze drying ?
(a) Jacques-Arsened's Arsonval (b) Charles Chamberland
(c) Willis Carrier (d) Clarence Birdseye
16. Clinical uses of interferon :
(a) Cancer treatment (b) Multiple sclerosis
(c) Both (d) Neither
17. Clinical uses of immunosuppressive drugs :
(a) Organ transplantation
(b) Hemolytic disease of the newborn
(c) Autoimmune disorders
(d) (a), (b) and (c)
18. Which of the following is false for monolithic devices ?
(a) The drug used for these devices has large therapeutic indices
(b) There are three categories of matrix devices
(c) 1st type has the drug dissolved in the polymer matrix
(d) 2nd type has drug dispersed
19. The rate at which monolithic devices transfer drugs to the patient's body is proportional to _____ of time.
(a) Square of time (b) The square root of time
(c) Twice the time (d) Half the time
20. Which of the following characteristics is suitable for transdermal drug ?
(a) Large drug dose
(b) Large molecular size
(c) Drugs with narrow therapeutic indices
(d) Drugs which are metabolized in the skin
21. In batch processes, saturated steam is pumped into the autoclave at temperatures around :
(a) 80 degree (b) 100 degree (c) 125 degree (d) 160 degree



22. What is the inner surface of autoclaves made of ?
(a) Mild steel (b) Copper (c) Stainless steel (d) Aluminium
23. Which method is used to identify spots on the TLC plate ?
(a) Spraying with reagents (b) Under microscope
(c) Fluorescence (d) Fluorescent adsorbent
24. HIV parasitizes _____.
(a) Y-helper cells (b) T-helper cells
(c) K-helper cells (d) None of the above
25. Abbreviation of ELISA is _____.
(a) Ion Selective Field Effect Transistors
(b) Enzyme Linked Field Effect Transistors
(c) Adenosine triphosphate
(d) Enzyme Linked Immunosorbent Assay
26. Y-shaped protein molecules manufactured by the body that help fight antigens is referred to as _____.
(a) antigen (b) antigen enzyme conjugate
(c) antibody enzyme conjugate (d) antibody
27. Which of the following are commonly tested for using the ELISA method ?
(a) HIV (b) Lyme Disease (c) Pregnancy (d) All of these
28. Which of the following is not the example of a live attenuated vaccine ?
(a) Tetanus vaccine
(b) MMR vaccine
(c) Varicella (chickenpox) vaccine
(d) Influenza vaccine
29. Structural analog/antimetabolite: cytotoxic immunosuppressive drug.
(a) Vincristine (b) Cyclophosphamide
(c) Azathioprine (d) None of the above
30. Which of the following are not correct on the basis of clinical trials ?
(a) Biomedical research studies
(b) Behavioral research studies
(c) Studies on human subjects
(d) Study based only on animals

