

No. of Printed Pages : 8

Question Booklet Code

A

21BTH2S2LP

Question Booklet
Serial Number

M.Sc. II Semester (NEP) Degree Examination, October - 2023

BIOTECHNOLOGY

Biopharmaceutical Techniques

Time : 1 Hour

Maximum Marks : 30

INSTRUCTIONS TO CANDIDATES

1. The Question Paper will be given in the form of a Question Booklet. There will be four/two versions of Question Booklets with Question Booklet Code viz. **A, B, C & D / A & B / A** only.
2. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your Question Booklet is un-numbered, please get it replaced by new Question Booklet with same Code.
3. Immediately after the commencement of the examination, the candidate should check that the Question Booklet supplied to him contains all the 30 questions in serial order. The Question Booklet does not have unprinted or torn or missing pages and if so he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same Code. This is most important.
4. A blank sheet of paper is attached to the Question Booklet. This may be used for Rough Work.
5. **Please read carefully all the instructions on the top of the Answer Sheet before marking your answers.**
6. Each question is provided with four choices **(A), (B), (C)** and **(D)** having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using **Black Ball-Point Pen** in the OMR Answer Sheet.
7. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator.
8. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.
9. First fifteen minutes is provided to fill the general information of the Student. Eg. Student Name, Student ID, etc. in the OMR Answer Sheet
10. Without the instruction of the Invigilator do not open the Question Paper Booklet Seal.

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1. The First protein sequenced by Frederick Sanger is _____.
(A) Haemoglobins (B) Myoglobin
(C) Insulin (D) Myosin

2. Animal cell culture are used widely for the production of _____.
(A) Insulin (B) Somatostatin
(C) Monoclonal Antibodies (D) All of the above

3. Which of the following techniques is used for reducing the total dissolved solids (TDS) in water ?
(A) Osmosis (B) Ion exchange
(C) Distillation (D) Both (B) and (C)

4. Interferon's are _____.
(A) Anti bacterial proteins (B) Anti-Viral Proteins
(C) Bacteriostatic Proteins (D) All of the above

5. Which of the following is an indicator of organic pollution ?
(A) BOD (B) COD
(C) Carbon dioxide (D) All of the above

6. The First Vaccine developed from animal cell culture was _____.
(A) Hepatitis B Vaccine (B) Influenza Vaccine
(C) Small pox Vaccine (D) Polio Vaccine

7. Recombinant proteins are _____.
(A) Proteins synthesized in animals
(B) Proteins synthesized by transgene in host cell by rDNA technology
(C) Protein synthesized in cells that are produced by protoplast fusion
(D) Proteins synthesized in mutated cell lines



8. The First successfully cloned animal was :
- (A) Monkey (B) Gibbon (C) Sheep (D) Rabbit
9. Half life ($t_{1/2}$) is the time required to :
- (A) Change the amount of a drug in plasma by half during elimination
(B) Metabolized half of an introduced drug into the active metabolite
(C) Absorb a half of an introduced drug
(D) Bind a half of an introduced drug to plasma proteins
10. Which tissue has the greatest capacity to bio-transform drugs ?
- (A) Kidney (B) Liver (C) Lung (D) Skin
11. What is the molecular weight of Monoclonal Antibody ?
- (A) 50 (B) 75 (C) 100 (D) 150
12. How many polypeptide chains are present in Monoclonal Antibody ?
- (A) 6 (B) 4 (C) 1 (D) 2
13. Which of the following Recombinant protein is used to treat coronary Heart blockage ?
- (A) Retuximab
(B) Tissue plasminogen Activator
(C) Erythropoietin
(D) Human Serum Albumin
14. How many disulphide bonds are present in Monoclonal Antibody ?
- (A) 16 (B) 4 (C) 6 (D) 12



15. In which stage of clinical studies mice is used ?
- (A) Phase I clinical
 - (B) Phase II and III clinical
 - (C) Phase I and II clinical
 - (D) Pre-clinical studies
16. What is LD₅₀ in Toxicology studies ?
- (A) It is a concentration of testing drug at that concentration, half of the mice will die
 - (B) It is a concentration of testing drug at that concentration, half of the enzyme activity will be inhibited in mice liver
 - (C) (A) and (B)
 - (D) None of the above
17. Human therapeutic protein majorly produced in _____.
- (A) Bacterial Expression System
 - (B) Saccharomyces services (Yeast)
 - (C) Pichia pastoris
 - (D) CHO cell lines
18. Which of the following analytical techniques used in MABs Quality control testing Labs ?
- (A) Antibody Dependent Cell-mediated Cytotoxicity (ADCC)
 - (B) Complement Dependent Cytotoxicity (CDC)
 - (C) (A) and (B)
 - (D) RTPCR
19. When was the smallpox virus first eradicated from the world ?
- (A) 1990 (B) 2000 (C) 1947 (D) 1980



- 20.** Which of the following is correct regarding MAbs ?
- (A) Different monoclonal antibodies have to be made to target different types of cancer
 - (B) Each monoclonal antibody recognizes one particular protein
 - (C) Monoclonal antibodies recognize and attach to any proteins produced by cells
 - (D) Different monoclonal antibodies cause different side effects
- 21.** What is the route of administration of MAbs ?
- (A) Subcutaneous
 - (B) Intra dermal
 - (C) Intravenous
 - (D) All the above
- 22.** Chemical nature of MAbs :
- (A) Carbohydrates
 - (B) Protein
 - (C) Glyco-proteins
 - (D) Glyco-lipids
- 23.** The antibody class found at highest concentrations in serum is :
- (A) IgG
 - (B) IgM
 - (C) IgE
 - (D) IgD
- 24.** The first recombinant vaccine produced targeted the surface antigen of which of the following virus ?
- (A) DENV1
 - (B) Ebola virus
 - (C) Hepatitis A virus
 - (D) Hepatitis B virus
- 25.** Most viral vaccines are thought to work by which of the following technique ?
- (A) Inducing the production of antigens
 - (B) Inducing the production of cell wall
 - (C) Inducing the production of cytosolic proteins
 - (D) Inducing the production of antibodies



26. Which of the following is secretory antibody ?
(A) IgA (B) IgM (C) IgD (D) IgG
27. The efficiency of a drug is not dependent on which of the following parameter ?
(A) Activity (B) Stability
(C) Selectivity (D) General targeting
28. Which Technique is useful to find copy number of gene ?
(A) RTPCR (B) Immune Florescent Assay
(C) ELISA (D) DNA Finger Printing
29. Which is the best method for cloning DNA in plasmid ?
(A) Sticky end cloning (B) Blunt end cloning
(C) Both (A) and (B) (D) None of the above
30. The most common type of gel used for DNA fragment separation is :
(A) Agar (B) Polyacrylamide
(C) Agarose (D) All of the above

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SPACE FOR ROUGH WORK



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