

MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES, MAHE, Manipal
BPharm VI Semester – End Semester Examinations: July-August 2021

BP
PBT-MPB605T Pharmaceutical Biotechnology

Date: 06.08.2021

Time: 2.30 to 4.30 pm

Max. Marks: 50

Instructions: Answer ALL questions. Draw neat labelled diagram wherever necessary.

Multiple Choice Questions

(20 x 1 m = 20 marks)

1. Major limitation in immobilization of cross-linked support bound enzyme is
 - a) Leaching
 - b) Inactivation
 - c) Diffusional limitation
 - d) Poor stability
2. The following statement is false in the case of Putrefaction process:
 - a) Causes rancidification
 - b) Products are toxic
 - c) Proteins are decomposed
 - d) Carbohydrates are decomposed
3. Shelf life of Proteases is low in the presence of:
 - a) Cations
 - b) Anions
 - c) Surface active agents
 - d) Perborates
4. Protein purification is used to:
 - a) Fold proteins
 - b) Introduce biochemical modification
 - c) Inactivate viruses
 - d) Avoid introduction of endotoxin
5. Ribosomes present in Prokaryotic cell are
 - a) 50S
 - b) 60S
 - c) 70S
 - d) 80S
6. Blocking step in Blotting technique is done using:
 - a) Nitrocellulose
 - b) Casein
 - c) PVDF
 - d) SDS

7. Isoguanine to Xanthine by *Clostridium cylindrosporium* is an example of microbial transformation involving:
 - a) Dehydration
 - b) Hydroxylation
 - c) Deamination
 - d) Condensation
8. Bacterial transduction occurs through transfer of genes by:
 - a) Cell contact
 - b) Freeze thaw
 - c) Increasing temperature
 - d) Bacteriophage
9. Disease Sickle cell anaemia occurs when the sixth amino acid in normal hemoglobin A changed from –
 - a) Glutamic acid to valine
 - b) Valine to glutamic acid
 - c) Glutamic acid to alanine
 - d) Alanine to glutamic acid
10. Silicone compounds are not preferred as antifoam agents because these are
 - a) Toxic
 - b) Utilized by microorganisms
 - c) Expensive
 - d) Unstable
11. Vitamin B-12 is synthesized by microorganism by the addition of the following precursor:
 - a) Phenethylamine
 - b) Cobalt chloride
 - c) Magnesium chloride
 - d) Methanol
12. Dextran as a plasma substitute should have an acceptable size of :
 - a) 60,000 daltons
 - b) 30,000 daltons
 - c) 300,000 daltons
 - d) 150,000 daltons
13. Vortex formation can be prevented during fermentation by using:
 - a) Steam seal
 - b) Sparger
 - c) baffle
 - d) propeller
14. Blood transfusion sets having filters help in
 - a) Preventing contamination
 - b) Preventing clot formation
 - c) Blood hemolysis
 - d) Removal of clots
15. RT-PCR test used in COVID19 detection works on the basis of
 - a) Release of fluorescent flashes during assay
 - b) Conversion of RNA into DNA followed by its amplification
 - c) Action of reverse transcriptase enzyme

- d) Use of different divalent cation in the reaction mixture
16. An example for naturally acquired passive immunity is
- Antibodies produced and recovered from animals
 - Antisera preparations
 - Transmission of antibodies through placental blood
 - Production of antibodies a natural infection
17. Which of the following is used for typing when a patient is being prepared for an organ transplant?
- MHC class I molecules
 - MHC class II molecules
 - MHC class III molecules
 - All of the above
18. Which of the following statement is incorrect regarding HAT selection
- B cells are HGPRT + and can grow in HAT medium but undergoes normal cell death
 - Myeloma cells cannot grow in HAT medium as these cells lack HGPRT
 - Hybrid cells survive in HAT medium as they inherit HGPRT from B cells
 - Aminopterin in HAT medium blocks de novo pathway of nucleotide synthesis only in myeloma cells
19. Which of the following immunoglobulin is the most abundant in newborns?
- IgA
 - IgM
 - IgG
 - IgD
20. Human Immunodeficiency Virus (HIV) binds specifically to which immune cell marker?
- CD8
 - MHC
 - CDC
 - CD4

Short Answer Questions

(6 x 5 m = 30 marks)

- Briefly explain the steps involved in a Polymerase Chain Reaction.
- During the production of insulin producing bacterial clone, explain the screening strategy employed in identification of transformed recombinant cells.
- Explain the production of tetanus vaccine.
- With help of a neat labelled diagram explain the working and applications of enzyme electrode from a typical biosensor.
- Write a note on microbial transformation of steroids.
- Describe the production and recovery of Citric Acid.