



Term End Examination 2024-2025

Programme – B.Pharm-2020/B.Pharm-2021/B.Pharm-2022

Course Name – Pharmaceutical Biotechnology Theory

Course Code - BP605T

(Semester VI)

Library

Pharmaceutical Technology
Brainware University
Barasat, Kolkata-700125

Full Marks : 75

Time : 3:0 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

$$1 \times 20 = 20$$

1. Choose the correct alternative from the following :
- (i) Identify the person who is known as the father of biotechnology.
- a) Louis Pasteur
b) Robert Koch
c) Karl Erkey
d) Robert Brown
- (ii) Name the genetic technique which is used in forensic science.
- a) Genetic fingerprinting
b) In vivo culture
c) Hybridoma technology
d) Gene transfer
- (iii) Predict the correct answer, example of glucose biosensor among the following.
- a) Thermal
b) Optical
c) Amperometric
d) Conductometric
- (iv) Identify the correct answer, Name the person who is the inventor of biosensor.
- a) Robert Hook
b) Thomas Alva Edison
c) Professor Iland C Clark
d) Einstein
- (v) Identify the molecule which the pregnancy kit tests for detection of pregnancy.
- a) Baby's urine test
b) Blood test
c) HCG test
d) Amniotic fluid test
- (vi) State the most common procedures for irreversible enzyme immobilization are covalent coupling, entrapment or microencapsulation and _____.
- a) Hydrophilic linkage
b) Disulphate bonding
c) Covalent bonding
d) Cross linking
- (vii) Select the suitable form of ionic group of enzymes.
- a) Acidic
b) Basic
c) Both a or b
d) Neutral
- (viii) Name the person who is the inventor of PCR
- a) Kary Mullis
b) James Watson
c) John Hopkins
d) Hargobind Khorana
- (ix) Name the enzyme which is active at 72°C in the polymerase chain reaction

- a) Isomerase
c) Polymerase
- b) Exonuclease
d) Endonuclease
- (x) Write the first product of TCA cycle
- a) Fumaric acid
c) Malic acid
- b) Oxalic acid
d) Citric acid
- (xi) Choose the correct source of production of Antibiotics
- a) Bacteria
c) Fungi
- b) Algae
d) Fungi and bacteria
- (xii) Which of the following is responsible for carrying out the heat for heat control at a large-scale in the fermenter
- a) Inter heating coils
c) Controlled bath
- b) Heating jacket
d) Cold-water circulation
- (xiii) Select the correct option: Monoclonal antibodies are formed by which of the following technologies
- a) Fermentation technology
c) Genetic engineering
- b) Hybridoma technology
d) None of these
- (xiv) Select the most predominant immunoglobulin in the body?
- a) IgA
c) IgM
- b) IgE
d) IgG
- (xv) Identify the method which is employed to transfer nucleic acid from gels to further analysis
- a) Gel electrophoresis
c) Blotting
- b) PFGE
d) PCR
- (xvi) Select the ribosome which is present in prokaryotic cell
- a) 80S
c) 50S and 40S
- b) 70S
d) 60S and 30S
- (xvii) Mutation is properly described as
- a) Change which affects the offspring's of F2 generation
c) Change in parents not inherited
- b) Change that is inherited
d) Plant growth controlling factor
- (xviii) Choose the best mutagens for inducing mutation in microorganism?
- a) Xray
c) Beta ray
- b) UV ray
d) Gamma ray
- (xix) Predict which of the following is not a Carbon source?
- a) Blackstrap molasses
c) Beet molasses
- b) Corn molasses
d) Yeast extract
- (xx) Choose the person who recognized the foaming patterns in fermentation
- a) Lee
c) Tyman
- b) Hall
d) Solomons

Group-B

(Short Answer Type Questions)

5 x 7=35

2. State the applications of genetic engineering in medicine. (5)
3. Differentiate between antigen & antibody in terms of structure, function and classification. (5)
4. Differentiate between active & passive immunity. (5)
5. Write down the production process of glutamic acid. (5)
6. Discussion the factors which affects in fermentation process. (5)
7. Explain the steps involve in amylase production. (5)

OR

Explain batch culture in fermentation technique.

(5)

8. Discuss about monoclonal antibody along with its application in pharmaceutical biotechnology.

(5)

OR

Write about the production and applications of hepatitis B vaccine.

(5)

Group-C

(Long Answer Type Questions)

10 x 2=20

9. Describe the process of drug biotransformation in comparison to microbial biotransformation in physiological system.

(10)

10. Elaborate the methods of enzyme immobilization.

(10)

OR

Discuss the concept biotechnology with reference to pharmaceutical sciences.

(10)