



# BRAINWARE UNIVERSITY

Term End Examination 2023-2024

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

Course Name – Pharmaceutical Microbiology

Course Code - BP303T

( Semester III )



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 x 20=20

1. Choose the correct alternative from the following :

- (i) Identify the correct component of bacterial flagella from the following options
  - a) Flagellin
  - b) Tubulin
  - c) Spinin
  - d) Microtubules
- (ii) Select which of the following option is an example of cocci which mostly occur in pairs
  - a) Streptococci
  - b) Diplococci
  - c) Tetrads
  - d) None of these
- (iii) Tell which of the following is the correct option for the minimum growth temperature required for thermophilic micro-organisms
  - a) 20 °C
  - b) 37 °C
  - c) 45 °C
  - d) 65 °C
- (iv) Choose which of the following biochemical test will be performed for the determination of the presence of acetoin
  - a) Methyl red Test
  - b) Voges Proskauer Test
  - c) Indole Test
  - d) Citrate Utilization test
- (v) Identify which of the following is the correct example of filamentous bacteria
  - a) Mycoplasmas
  - b) Spirochetes
  - c) Vibrios
  - d) Actinomycetes
- (vi) Choose which staining test will be conducted to identify the causative organism for a 30 year old woman suffering from leprosy.
  - a) Acid-fast staining method
  - b) Auramine staining method
  - c) Gram staining method
  - d) None of these
- (vii) Choose which of the following is the correct option for "In gram positive and gram negative bacteria the electron transport contains"
  - a) Naphthquinone
  - b) Plastoquinone
  - c) Ubiquinone
  - d) Both Naphthquinone and Plastoquinone
- (viii) Choose the anionic dye used in the staining process from the following options

LIBRARY  
Brainware University  
Barasat, Kolkata - 700125  
033-26114611

- a) Nigrosin  
c) Methylene blue
- (ix) Choose which of the following dye is used as primary stain in Gram staining method  
a) Crystal Violet  
c) Carbol fuschin
- (x) Choose what will be the color of the gram negative bacteria on treatment of Gram's iodine  
a) Pink  
c) Colorless
- (xi) Choose the correct order of staining reagents in Gram-Staining method  
a) Crystal violet, alcohol, iodine solution, safranin  
c) Crystal violet, safranin, alcohol, iodine solution
- (xii) Choose which of the following option is true for Gram-negative bacteria  
a) upon alcohol treatment, the permeability of the cell wall increases  
c) pore size decreases and the CV-I complex cannot be extracted
- (xiii) State what will be the total magnification of microscope having an eyepiece of 10X and the objective lens of 45X  
a) 100X  
c) 4500X
- (xiv) Locate the region where bacterial genome resides is termed as  
a) Nucleus  
c) Nucleoid
- (xv) Choose which of the following sterilization is indicated by Bacillus pumilis  
a) Moist heat  
c) Radiation
- (xvi) Select which of the following is the most suitable technique for isolating stringent anaerobes?  
a) Streak-plate technique  
c) Micromanipulation
- (xvii) Select which of the following option is the basic composition of bacterial cell wall  
a) Only protein  
c) Only lipid
- (xviii) List out the correct composition of Chocolate agar  
a) Mineral salt solution, glycerol, whole egg  
c) Nutrient agar and 5-10% sheep blood, horse blood
- (xix) Select which of the followings are the examples of spherical shaped bacteria except  
a) Diplococcus pneumonia  
c) Klebbisella pneumonia
- (xx) Identify which type of culture media is required for the cultivation of fastidious micro-organisms?  
a) Enrichment media  
c) Enriched media
- b) Crystal violet  
d) both Crystal violet and Methylene blue
- b) Gram's iodine  
d) methylene blue
- b) Dark Purple  
d) None of these
- b) Crystal violet, iodine solution, alcohol, safranin  
d) Iodine solution, crystal violet, alcohol, safranin
- b) crystal violet-iodine (CV-I) complex is extracted  
d) alcohol treatment increases the permeability of the cell wall and the CV-I complex can be extracted
- b) 450X  
d) 45X
- b) Cytoplasm  
d) Ribosome free region
- b) Dry heat  
d) Gaseous
- b) Spread- plate technique  
d) Roll-tube technique
- b) Glycoprotein  
d) Peptidoglycan
- b) Nutrient broth and agar (2-3%)  
d) Peptone water+ agar bile salt 0.5% lactose +1% neutral red
- b) Streptococcus lactis  
d) Staphylococcus aureus
- b) Selective media  
d) Indicator media

**Group-B**  
(Short Answer Type Questions)

5 x 7=35

2. Describe the Periodic Transfer to Fresh Media preservation techniques of isolated pure culture. (5)
3. Differentiate between disinfectant and antiseptics. (5)
4. Classify fungi and mention the characteristics features of fungi. (5)
5. Differentiate between Eukaryotic and Prokaryotic cell (5)
6. Explain the different sterility indicators. (5)
7. Write a short note on different types of microbial contamination. (5)

OR

- Write a short note on Spoilage. (5)
8. Illustrate the identification of bacteria using Methyl red and Citrate Utilization test (5)
- OR
- Illustrate the procedure of Simple Staining technique (5)

**LIBRARY**  
**Brainware University**  
**Barasat, Kolkata - 700125**

**Group-C**  
 (Long Answer Type Questions)

10 x 2=20

9. State the physical requirements for the growth of bacteria (10)
10. Differentiate between any two differential staining technique for the identification a bacteria (10)

OR

Conclude which sterilization method is more advantageous out of Dry heat sterilization and Moist heat sterilization. (10)

\*\*\*\*\*