BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Pharm-2020/B.Pharm-2021/B.Pharm-2022/B.Pharm-2023
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) Which of the following is not an example of spherical-shaped bacteria?
   a) Diplococcus pneumonia b) Streptococcus lactis
   c) Klebbisella pneumonia d) Staphylococcus aureus

(ii) Which of the following is the correct composition of chocolate agar media?
   a) Mineral salt solution, glycerol, whole egg b) Nutrient broth and agar (2-3%)
   c) Nutrient agar and 5-10% sheep blood, horse blood d) Peptone water+ agar bile salt 0.5% lactose +1% neutral red

(iii) Which of the following option is the correct phase for the rapid growth of bacteria?
   a) Lag phase b) Generation phase
   c) Exponential phase d) Stationary phase

(iv) Choose the correct component present in the electron transport of gram-positive and gram-negative bacteria.
   a) Naphthquinone b) Plastoquinone
   c) Ubiquinone d) Both Naphthquinone and Plastoquinone

(v) Select the method used for identifying Mycobacterium tuberculosis.
   a) Acid fast staining b) Gram staining
   c) Auramine method d) Both Acid fast staining and Gram staining

(vi) Choose the stain that is used as the primary stain in the Gram staining method.
   a) Crystal Violet b) Gram's iodine
   c) Carbol fuschin d) Methylene blue

(vii) Identify the non-thermal method of sterilization.
   a) Filtration b) Autoclaving
   c) Both Filtration and Autoclaving d) None of these

(viii) Which microbe is suitable for cultivation by the chick-embryo method?
   a) Virus b) Bacteria
   c) Fungus d) Protozoa

(ix) Select the correct evaluation method for bactericidal activity.

a) RW co-efficient test
b) Gram Staining
c) Acid fast staining
d) Auramine method

(x) Identify the name of the protein coat of the virus.

a) Capsid
b) Peptic acid
c) Peptidoglycan
d) Lipopolysaccharides

(xi) Identify the non spherical shaped bacteria from the following options:

a) Diplococcus pneumonia
b) Streptococcus lactis
c) Klebbisella pneumonia
d) Staphylococcus aureus

(xii) Select the method for the assay of Amphotericin B:

a) Cylinder plate method
b) Turbidimetric assay method
c) Both Cylinder plate method and Turbidimetric assay method
d) None of these

(xiii) Identify the items that could be sterilized by dry heat sterilization:

a) glass pipette
b) Plastic IV bags
c) rubber gloves
d) plastic petri dishes

(xiv) Choose the co-efficient test not used for disinfectants:

a) Kelsey-Sykes test
b) Chick-Martin test
c) RW test
d) Phenol co-efficient test

(xv) Determine a limitation of the autoclave:

a) It cannot be used with glassware
b) It takes too long to sterilize
c) It lacks the ability to inactivate viruses
d) It will destroy heat labile materials

(xvi) Which of the following is NOT a key component of an aseptic area design?

a) High-efficiency particulate air (HEPA) filters
b) Positive pressure airflow
c) Temperature control
d) Restricted access barriers

(xvii) Choose the correct purpose of performing media fills in an aseptic area:

a) To test the sterility of the environment
b) To fill product containers with media
c) To conduct microbial identification
d) To clean the cleanroom

(xviii) Which type of air is used in a laminar airflow cabinet to create a clean environment?

a) Recirculated room air
b) Filtered and purified air
c) Ambient laboratory air
d) Compressed air

(xix) Select the correct option for which the Chick Martin test is used to evaluate:

a) Disinfectant
b) Antiseptic
c) Both a & b
d) None

(xx) Predict the correct flow rate from membrane filter:

a) 55-75ml of water/min at 70mm of Hg
b) 60-90ml of water/min at 70mm of Hg
c) 55-75ml of water/min at 90mm of Hg
d) 55-75ml of water/min at 120mm of Hg

Group-B

(Short Answer Type Questions) 5 x 7=35

2. Write a short note on the physical method of sterilization. (5)
3. Distinguish between Eukaryotic and Prokaryotic cells. (5)
4. Describe LAL test for sterility testing (5)
5. List the different types of culture media. (5)
6. Discuss about the different methods of microbial contamination prevention in an aseptic area. (5)
7. Evaluate the identification protocol for bacteria using the indole and Voges Proskauer test. (5)

OR

Distinguish between gram staining and acid-fast staining techniques. (5)

8. Compare between moist heat and dry heat sterilization to determine which is a better sterilization technique. (5)

OR

Differentiate between any two IMViC tests. (5)

Group-C

(Long Answer Type Questions) 10 x 2=20

9. Describe the physical requirements needed for the growth of a bacteria. (10)
10. Explain the different methods of sterilization. (10)

OR

Illustrate the sterility indicator correlating with the equipment used in large-scale industry. (10)

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