



BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – B.Sc. Nursing-2024

Course Name – Applied Microbiology and Infection Control including Safety

Course Code - MICR201

(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. Write answer of Section – A and Section –B in separate Answer booklet.]

Section : A

Marks : 38

Group-A

(Multiple Choice Type Question)

7 x 1=7

1. Choose the correct alternative from the following :

- (i) Select the primary purpose of cryopreservation.
 - a) Rapid growth of microorganisms
 - b) Prolonged preservation of biological materials
 - c) Enhancing metabolic activities
 - d) Promoting chemical reactions
- (ii) State the type of bacteria requires high salt concentrations for growth?
 - a) Acidophiles
 - b) Alkaliphiles
 - c) Halophiles
 - d) Neutrophiles
- (iii) Choose the phase of the microbial growth curve is characterized by a horizontal, flat line.
 - a) Lag phase
 - b) Exponential phase
 - c) Stationary phase
 - d) Death phase
- (iv) Write the type of immunoglobulin that are primarily involved in allergic reactions.
 - a) IgA
 - b) IgG
 - c) IgE
 - d) IgM
- (v) Select which immune response component is responsible for the secondary immune response.
 - a) Plasma cells
 - b) Macrophages
 - c) Memory B cells
 - d) Neutrophils
- (vi) Identify which phylum do roundworms belong to.
 - a) Platyhelminthes
 - b) Nematoda
 - c) Annelida
 - d) Arthropoda
- (vii) Predict which type of culture medium inhibits the growth of certain microorganisms while allowing the growth of others.
 - a) Differential medium
 - b) Selective medium
 - c) Enrichment medium
 - d) Complex medium

Group-B
(Long Answer Type Questions)

1 x 10 =

2. Justify the significance of the Universal Immunization Programme in India. Explain the vaccines included in the Universal Immunization Programme (UIP) and their role in preventing infectious diseases in India. (10)

OR

- Predict the key characteristics of virus. Explain and illustrate the structure of virus. (10)
Classify virus based on the shapes of viral capsids.

Group-C
(Short Answer Type Questions)

3 x 5 = 15

3. Describe antigen-antibody interactions. What are the factors that effects antigen-antibody interactions.
4. Illustrate and explain the detail structure of bacterial cell.
5. Discuss the steps and principle of the Gram stain technique.

OR

Define spontaneous generation. Explain two scientific methods used to disprove spontaneous generation

Group-D
(Very Short Answer Type Questions)

3 x 2 = 6

6. Differentiate between IgG and IgM antibodies. (2)
7. Describe the key characteristics used to classify bacteria in microbial taxonomy. (2)
8. Explain the difference between a compound microscope and an electron microscope. (2)

Section : B

Marks : 37

Group-A
(Multiple Choice Type Question)

6 x 1 = 6

9. Choose the correct alternative from the following :

- (i) Identify Category yellow D of biomedical wastes
a) Human anatomical waste b) Soiled waste
c) Discarded or expired medicine d) Clinical laboratory waste
- (ii) Recall the purpose of antibiotic stewardship-
a) Ensuring judicious use of antibiotics b) Spread awareness
c) Ensuring controlled use of antimicrobial d) all of the above
- (iii) Which of the following reduce the stasis by enhancing the venous outflow
a) Venous foot pump b) Compression stocking
c) Intermittent pneumatic expression d) None of the above
- (iv) Identify first preference for identification bands applied on the patient's body
a) Ankle b) Right wrist
c) Left wrist d) None of the above
- (v) The lasers can be categorized into
a) Solid-state lasers b) Gas lasers
c) Chemical lasers d) All of the above
- (vi) Select the sources of radiations that can be very hazardous for the HCWs
a) Radio nuclides for diagnosis b) X-ray machine
c) Both a& b d) None of these

Group-B
(Long Answer Type Questions)

1 x 10=10

10. Explain the care of Nasogastric tubes

(10)

OR

Explain in details about prevention of DVT

(10)

Group-C
(Short Answer Type Questions)

3 x 5=15

11. Discuss the role of nurses in biomedical waste management.
12. Explain Needle stick injury in details.
13. Summarize about the advantages of alcohol as disinfectants

(5)

(5)

(5)

OR

Explain Autoclave

(5)

Group-D
(Very Short Answer Type Questions)

3 x 2=6

14. List 5 moments for Hand Hygiene
15. Classify the dry heat sterilization
16. Discuss the components of Annual Health Check up

(2)

(2)

(2)
