



## BRAINWARE UNIVERSITY

### Term End Semester Examinations, January- 2024

Programme – Bachelor of Science in Nursing

Course Name – Applied Microbiology and Infection Control including Safety

Course Code – MICR 201

(Semester – III)

Time allotted: 3 hrs.

Full Marks: 75

[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

#### (Applied Microbiology)

Marks - 37

#### Group – A (Multiple Choice Question)

6 x 1 = 6

1. Select the correct answer of the following :-
  - i) Microbiology is
    - a) Study of microorganisms
    - b) Study of large organisms
    - c) Study of plants
    - d) Study of minerals
  - ii) The microbes are
    - a) Large organisms
    - b) Visible to the naked eye
    - c) Microscopic organisms, including bacteria, viruses, and fungi
    - d) Only found in soil
  - iii) Identify the main characteristic feature of viruses
    - a) They are prokaryotic
    - b) They are unicellular
    - c) They are obligate intracellular parasites
    - d) They can perform photosynthesis
  - iv) Choose the correct primary method of transmission for gastrointestinal parasites in humans
    - a) Respiratory droplets
    - b) Contaminated food and water
    - c) Mosquito bites
    - d) Skin contact
  - v) Identify a Gram-negative bacterium among followings
    - a) *Staphylococcus aureus*
    - b) *Escherichia coli*
    - c) *Streptococcus pyogenes*
    - d) *Clostridium botulinum*
  - vi) Identify the type of immunity is directly mediated by antibodies
    - a) Active immunity
    - b) Natural immunity
    - c) Passive immunity
    - d) Hereditary immunity

**Group – B (Essay/ Long answer type question)**

**1 x 10 = 10**

*(Answer Any One Question)*

2. Classify microbes on the basis of their structure. 10  
 OR Discuss the types of vaccines. 10

**Group – C (Short answer type question)**

**3 x 5 = 15**

3. Write short notes *(Answer Any Three Questions)*

- a) Illustrate the bacterial growth curve. [5]
- b) Describe the Koch's Postulates. [5]
- c) Define the immune system and its primary function. [5]
- d) Explain the role of T cells play in the immune system. [5]
- e) Write the names of the 5 pathogenic bacteria with their associated diseases. [5]

**Group – D (Very short answer type question)**

**3 x 2 = 6**

4. Write in short *(Answer Any Three Questions)*

- a) State the role of antigens in the immune response. [2]
- b) Differentiate between Gram-positive and Gram-negative bacteria. [2]
- c) Explain the characteristics of viruses [2]
- d) Define Pasteurization. [2]

**Section – B**

**(Infection control including safety)**

**Marks - 38**

**Group – A (Multiple Choice Question)**

**7 x 1 = 7**

5. Select the correct answer of the following :-

- i) Identify the mode of transmission of healthcare associated infections
  - a) Through contact
  - b) Airborne
  - c) Parenteral route
  - d) All of the above
- ii) Temperature and time period used in holder method of Pasteurization is:
  - a) 63°C for 30 minutes
  - b) 63°C for 50 minutes
  - c) 72°C for 20 seconds
  - d) 72°C for 40 seconds
- iii) Identify the vial for collection of fasting blood sugar specimen-
  - a) plain vial
  - b) EDTA vial
  - c) fluoride vial
  - d) citrate vial
- iv) Biomedical waste includes-
  - a) Medicine vials
  - b) Blood soiled cotton
  - c) Used syringes
  - d) All of the above



Phlebitis means

- a) Vein inflammation
  - b) Bone inflammation
  - c) Gum inflammation
  - d) None of the above
- vi) CLABSI stands for
- a) Central -Line associated Blood Stream infection
  - b) Control -Line associated Blood Stream infection
  - c) Central -Line associated Blood Stream infestation
  - d) None of the above
- vii) Select the key parameter of an IPSG to reducing the healthcare associated infections
- a) Use of antibiotics
  - b) Hand hygiene
  - c) Communication
  - d) All of the above

**Group – B (Essay/ Long answer type question)**

**1 x 10 = 10**

*(Answer Any One Question)*

- 6. Describe in details various aseptic technique 10
- OR Explain the steps to be followed by a nursing student for collection of urine specimen at a general ward. Identify the special considerations to be taken while transporting different types of specimens. 3+7

**Group – C (Short answer type question)**

**3 x 5 = 15**

7. **Write short notes** *(Answer Any Three Questions)*

- a) Discuss about Nosocomial microbes [5]
- b) Explain the various steps of biomedical waste management. [5]
- c) Discuss care to be taken for Blood transfusion [5]
- d) Describe Needle stick injury in details [5]
- e) Write a short note on Autoclave [5]

**Group – D (Very short answer type question)**

**3 x 2 = 6**

8. **Write in short** *(Answer Any Three Questions)*

- a) Define personal protective equipment. [2]
- b) List down 5 moments for Hand Hygiene [2]
- c) Classify the types of specimens collected in healthcare settings [2]
- d) Define antimicrobial resistance. [2]
- e) Define RACE and PASS. [2]