

N.A.



BRAINWARE UNIVERSITY

Term End Examination 2023
Programme – B.Sc.(OTT)-2021
Course Name – Clinical Microbiology
Course Code - BOTT201
(Semester II)

Full Marks : 60

Time : 2:30 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 15=15

1. Choose the correct alternative from the following :

- (i) Identify the solution used in lab to maintain sterility
- | | |
|--------------------|------------------------|
| a) Sodium chloride | b) Sodium hypochloride |
| c) Sodium benzoate | d) All of these |
- (ii) Indicate the terms which refers to a prokaryotic cell that is comma shaped?
- | | |
|-------------|-------------|
| a) Coccus | b) Vibrio |
| c) Bacillus | d) Palisade |
- (iii) Quote the genus member to which HIV belongs
- | | |
|--------------------|---------------|
| a) Ortho myxovirus | b) Retrovirus |
| c) Parvovirus | d) Reovirus |
- (iv) Name the agent used to prevent Malaria
- | | |
|------------------------|----------------|
| a) Mebendazole | b) Chloroquine |
| c) Inactivated vaccine | d) Zinc table |
- (v) Write the function of the bacterial cell membrane
- | | |
|---|---|
| a) To protect the cell from the environment | b) To transport nutrients into the cell |
| c) To synthesize DNA | d) To produce energy for the cell |
- (vi) Select the term used to describe an infection that spreads rapidly and affects many individuals in a community
- | | |
|-------------|-------------|
| a) Epidemic | b) Endemic |
| c) Pandemic | d) Outbreak |
- (vii) Describe the primary purpose of using antibiotics
- | | |
|----------------------------------|------------------------------|
| a) To treat bacterial infections | b) To treat viral infections |
| c) To treat fungal infections | d) To reduce inflammation |

- (viii) Choose among the following which is not a component of the innate immune system
- a) B cells
b) Macrophages
c) Natural killer cells
d) Complement system
- (ix) Name of the acid fast bacteria is
- a) E.coli
b) Staphylococcus aureus
c) Mycobacterium tuberculosis
d) Candida albicans
- (x) Choose the term used to describe the ability of an antigen to stimulate an immune response
- a) Immunogenicity
b) Antigenicity
c) Allergenicity
d) Pathogenicity
- (xi) Identify the factors in which Spores are killed
- a) Boiling at 100 degree C
b) Pasteurization
c) Autoclave
d) Filtration
- (xii) Select how Phenol is antimicrobial agent
- a) it can disrupt cell membrane structure
b) it can prevent replication process
c) it can damage DNAstrand
d) it can absorb water from cell
- (xiii) Discover the use of iodine in Gram staining
- a) Fixative
b) Mordant
c) Primary stain
d) Secondary stain
- (xiv) Locate Gram staining is an example of
- a) Differential staining
b) Simple staining
c) Acid fast staining
d) All options are correct
- (xv) Name the device used to grow and maintain microbiological cultures
- a) Hot air oven
b) Autoclave
c) HEPA
d) Incubator

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain human microbiome with examples (3)
3. Define the process of Infection control in OT (3)
4. Describe the morphology of bacterial cells and provide examples of different shapes. (3)
5. Define human microbiota. Discuss where is it found in the human body (3)
6. Explain the measures which can be taken to control outbreaks of nosocomial infections (3)

OR

Classify some common types of antibiotics, and what are they used for. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Explain urinary tract infections (UTIs). Suggest the most common types seen in the general population (5)
8. Distinguish between Gram-positive and Gram-negative bacteria in terms of the cell wall structure. Explain how this relates to Gram staining. (5)
9. Illustrate different morphological types of bacteria, and classify them. (5)
10. Write down the advantages and disadvantages of different sterilization methods. How are they selected for different applications? (5)
11. Define antigen. How does the immune system recognize and respond to antigens (5)
12. Explain hepatitis. Classify different types of hepatitis virus (5)

OR

Explain the structure of COVID-19. Justify how it differs from other viruses.

(5)
