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BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – DMLT-2023/DMLT-2024/DMLT-2025

Course Name – Systemic & Clinical Bacteriology

Course Code - DMLT203

(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) Select the following is the first line anti tubercular drug.
 - a) Pyrazinamide
 - b) Ethambutol
 - c) Rifampicin
 - d) All of the above
- (ii) Which part of the body is most commonly affected by leprosy?
 - a) Eyes
 - b) Lungs
 - c) Liver
 - d) Skin
- (iii) Which enzyme is detected in the catalase test?
 - a) Catalase
 - b) Lipase
 - c) Amylase
 - d) Protease
- (iv) Which enzyme is responsible for clot formation in the coagulase test?
 - a) Catalase
 - b) Coagulase
 - c) Amylase
 - d) Lipase
- (v) What pH indicator is commonly used in citrate medium?
 - a) Methyl red
 - b) Phenol red
 - c) Bromothymol blue
 - d) Bromocresol purple
- (vi) Which of the following sugars are present in TSI agar?
 - a) Glucose and lactose
 - b) Glucose and sucrose
 - c) Glucose, lactose, and sucrose
 - d) Glucose, lactose, and maltose
- (vii) What does the black coloration in the TSI agar indicate?
 - a) Production of hydrogen sulfide
 - b) Fermentation of all sugars
 - c) Presence of Gram-negative bacteria
 - d) Absence of fermentation
- (viii) Which of the following techniques is used to visualize motility in the Motility Test?
 - a) Gram staining
 - b) Acid-fast staining
 - c) Hanging drop preparation
 - d) Simple staining
- (ix) Which bacterial structure is primarily responsible for motility?

- a) Cilia
c) Pili
- b) Flagella
d) Endospores
- (x) What is the lepromin test used to diagnose?
- a) Tuberculosis
c) HIV/AIDS
- b) Leprosy
d) Malaria
- (xi) What is the duration of observation after administering the lepromin test?
- a) 24 hours
c) 72 hours
- b) 48 hours
d) 1 week
- (xii) Which type of culture media encourages the growth of certain microorganisms while inhibiting others?
- a) Enriched media
c) Selective media
- b) Differential media
d) Complex media
- (xiii) Blood agar is an example of which type of culture media?
- a) Differential media
c) Selective media
- b) Complex media
d) Enriched media
- (xiv) What is the purpose of adding blood to blood agar?
- a) To make the medium more nutritious
c) To inhibit the growth of certain bacteria
- b) To provide a substrate for pigment production
d) To visualize hemolysis patterns of bacteria
- (xv) Mycobacterium tuberculosis have the ability to survive and multiply inside ____
- a) RBC
c) Nucleus
- b) Neuron
d) Macrophages

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Describe the importance of mordant in Gram staining method. (3)
3. Write a short note on hemolysis. (3)
4. Define Plasmid (3)
5. Discuss about the Transformation process in horizontal gene transfer. (3)
6. Compare and contrast the latent and active forms of tuberculosis, including factors contributing to the reactivation of latent infection. (3)

OR

- Compare and contrast between the pulmonary and extrapulmonary tuberculosis. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Illustrate briefly about the different types of inoculation techniques which is used in microbiology laboratory. (5)
8. Illustrate briefly about the laboratory diagnosis of Leprosy. (5)
9. A 28 year old male was admitted to the hospital with complaints of low grade fever loss of weight and chronic cough with expectoration. for past 6 months Sputum examination revealed long slender and beaded acid fast bacilli What is your provisional diagnosis and Mention the laboratory diagnosis in detail. (5)
10. Explain the Lowenstein Jensen medium and interpret the result after growing of M.tuberculosis. (5)
11. Write a short note on Lepromin test (5)
12. Illustrate briefly the biochemical tests used to differentiate Staphylococcus aureus from other Staphylococcal species in the laboratory. (5)

OR

- Compare and contrast between coagulase positive and coagulase negative Staphylococci and their clinical significance. (5)