

SSR DEGREE AND PG COLLEGE (AUTONOMOUS)
B.Sc. Medical Laboratory Technology – II Year
Semester – III Internal- I Question Bank
Subject: Microbiology – Part I

SECTION – A: Multiple Choice Questions

- 1. Who proposed Koch's postulates?**
A) Louis Pasteur B) Robert Koch C) Joseph Lister D) Edward Jenner
Ans: B
- 2. Which microscope is commonly used in routine microbiology laboratories?**
A) Electron microscope B) Fluorescence microscope
C) Phase-contrast microscope D) Compound light microscope **Ans: D**
- 3. The first scientist to observe living microorganisms was**
A) Antonie van Leeuwenhoek B) Robert Hooke C) Alexander Fleming
D) Louis Pasteur **Ans: A**
- 4. Gram staining differentiates bacteria based on their**
A) Shape B) Motility C) Cell wall structure D) Size **Ans: C**
- 5. Which medium is commonly used for antibiotic susceptibility testing?**
A) Blood agar B) Mueller-Hinton agar C) Nutrient broth
D) Chocolate agar **Ans: B**
- 6. Bacteria reproduce mainly by**
A) Binary fission B) Budding C) Conjugation D) Sporulation **Ans: A**
- 7. Which stain is used to identify Mycobacterium species?**
A) Gram stain B) Capsule stain C) Spore stain D) Acid-fast stain
Ans: D
- 8. Which phase of the bacterial growth curve shows rapid multiplication?**
A) Lag phase B) Decline phase C) Log phase D) Stationary phase
Ans: C
- 9. The resolving power of a microscope mainly depends on**
A) Numerical aperture B) Stage size C) Eyepiece magnification
D) Tube length **Ans: A**
- 10. The misuse of antibiotics mainly leads to**
A) Faster growth of bacteria B) Antibiotic resistance
C) Increased immunity D) Better staining reactions **Ans: B**
- 11. Nutrient agar is an example of**
A) Differential medium B) Enriched medium C) Basal (simple) medium
D) Transport medium **Ans: C**
- 12. Transport media are used to**
A) Kill bacteria B) Enhance bacterial multiplication

- C) Differentiate bacteria D) Preserve microorganisms during transport
Ans: D
- 13. Louis Pasteur is well known for developing the**
 A) Pasteurization process B) Gram stain C) Electron microscope
 D) Petri dish **Ans: A**
- 14. Which specimen is commonly collected for urine culture?**
 A) Catheter tip B) Midstream urine C) Saliva D) Sputum **Ans: B**
- 15. Which bacterial shape is comma-shaped?**
 A) Coccus B) Bacillus C) Vibrio D) Spirillum **Ans: C**
- 16. Which microscope provides the highest magnification?**
 A) Simple microscope B) Compound microscope
 C) Phase-contrast microscope D) Electron microscope **Ans: D**
- 17. The kingdom that includes bacteria is**
 A) Monera B) Protista C) Fungi D) Plantae **Ans: A**
- 18. Penicillin mainly inhibits bacterial**
 A) Protein synthesis B) Cell wall synthesis C) DNA replication
 D) RNA synthesis **Ans: B**
- 19. Which of the following is a selective medium?**
 A) Nutrient agar B) Blood agar C) MacConkey agar
 D) Peptone water **Ans: C**
- 20. Which scientist discovered penicillin?**
 A) Robert Koch B) Louis Pasteur C) Joseph Lister
 D) Alexander Fleming **Ans: D**

SECTION – B: Fill in the Blanks

- The scientist known as the Father of Microbiology is **Antonie van Leeuwenhoek.**
- The process of destroying pathogenic microorganisms in milk by heat is called **Pasteurization.**
- The staining technique used to differentiate bacteria into Gram-positive and Gram-negative is **Gram staining.**
- Bacteria primarily reproduce by **Binary fission.**
- The rapid multiplication phase in the bacterial growth curve is the **Log (Exponential)** phase.
- The microscope routinely used in microbiology laboratories is the **Compound light microscope.**
- Numerical aperture** determines the resolving power of a microscope.
- The kingdom to which bacteria belong is **Monera.**
- The medium commonly used for antibiotic susceptibility testing is **Mueller-Hinton agar.**
- The stain used to identify *Mycobacterium tuberculosis* is **Acid-fast stain.**
- The misuse of antibiotics leads to **Antibiotic resistance.**
- Robert Koch** proposed Koch's postulates.

13. A culture medium that supports the growth of many microorganisms is called a **Basal (Simple)** medium.
14. **Transport medium** is used to preserve the viability of microorganisms during transportation.
15. The bacterial shape that resembles a comma is called **Vibrio**.
16. **Alexander Fleming** discovered penicillin.
17. The process of collecting a urine specimen for culture is commonly done using **Midstream urine**.
18. The outer rigid layer of bacteria responsible for maintaining cell shape is the **Cell wall**.
19. **Louis Pasteur** developed the Germ Theory of Disease.
20. Antibiotics such as penicillin inhibit **Cell wall synthesis** in bacteria.

SECTION-C Descriptive Questions

1. Discuss the historical development of Microbiology and the contributions of Louis Pasteur and Robert Koch.
2. Explain Koch's Postulates and describe their significance and limitations in medical microbiology.
3. Describe the principles of microscopy and classify microorganisms with suitable examples.
4. Describe the morphology of bacteria and explain the different staining methods used in microbiology.
5. Explain bacterial nutrition, growth and the different types of culture media and culture methods.