Objective - Section A

1. Hospital and pathology laboratory waste disposal is most commonly done by _____ method.
A. Irradiation
B. Fractional sterilization
C. Heat sterilization
D. Chemical sterilization

2. The mixed culture of bacteria is diluted directly in tubes containing melted agar medium maintained in the liquid state at a temperature of ---------°C.
A. 75
B. 65
C. 55
D. 45

3. In gram-negative bacteria, peptidoglycans make up about --------percent of the cell wall dry weight.
A. 1
B. 10
C. 20
D. 50

4. Filtration is a great way to quickly sterilize solutions without heating. For the removal of _____, filter with an average pore diameter of 0.2 µm are normally used.
A. viruses
B. bacteria
C. phages
D. All of these

5. Generally, _____ method is used to isolate those microorganisms, which are present in relatively small numbers or that have slow growth rates compared to the other species present in the mixed culture.
A. Streak plate method
B. Enrichment culture method
C. Pour plate method
D. Spread plate method

6. The study of algae and seaweed is known as _____.
A. Mycology
B. Nematology
C. Protozoology
D. Phycology

7. Gram staining can be used for yeast cells. They stain in _____ color because they lack lipid layer in their cell wall unlike bacteria.
A. Purple/violet
B. Pink
C. Red
D. Yellow

8. In a simple light microscope _____.
A. Only two lenses are present
B. Has two adjustment knobs
C. Condenser part is absent
D. All of above

9. In microscope, _____ regulates the amount of light that reaches the specimen.
A. Diaphragm
B. Aperture
C. Adjustment knob
D. Eyepiece

10. As decomposers, _____ play an important role in an ecosystem.
A. Bacteria and viruses
B. Bacteria and algae
C. Bacteria and fungi
D. Fungi and algae

Short Questions - Section B

Each question carries 2 marks. Attempt any 13 questions.

Q1. What is the meaning of microbiology?
Q2. What is the basic objective of a microscope?
Q3. Enlist four types of harmful microorganisms.
Q4. Draw and label a bacterial cell.
Q5. What is the main difference between light and electron microscope?
Q6. Describe some functions of electron microscope.
Q7. What are the main functions of illuminator and condenser in a compound microscope?
Q8. Describe the process of moist heat sterilization.
Q9. What is the importance of gram staining in microbiology?
Q10. What is mycology?
Q11. Classify bacteria on the basis of gram staining. Give some examples.
Q12. What is the principle of gram staining?
Q13. What methods of sterilization are used to control the microbial population of air?
Q14. How will you report a positive result of Ziehl-Neelsen stain?
Q15. Write a short note on waterborne diseases.
Q16. What is the importance of a microbiological culture?
Q17. Enlist various methods of obtaining pure cultures of bacteria.

Long Questions - Section C

Each question carries 7 marks. Attempt any 2 questions.

Q1. What is sterilization? Briefly discuss various methods of sterilization. (7)

Q2. a. Discuss that why streak plate method is most commonly used to isolate pure cultures of bacteria? (3)
b. Write down the reagents and procedure of gram staining. (4)

Q3. What is studied in soil microbiology? Discuss four major constituents of soil. (7)