



**Avinashilingam Institute for Home Science and Higher Education for Women**

Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956 (now MoE)

Re-accredited with A++ Grade by NAAC. Recognised by UGC under Section 12B

Coimbatore - 641 043, Tamil Nadu, India

Continuous Internal Assessment – I February, 2025

IV Semester

**Class: IIUG**  
**Major: Biochemistry/Biotechnology**

**Max.Marks : 60**  
**Time : 2 hours**

**23BBTC04MICROBIOLOGY AND INDUSTRIAL FERMENTATION**

CO1: Appreciate the principle of various microscopes and their utility in microbiology

CO2: Gain an insight into the classification of microorganisms and their ultrastructures

CO3: Acquire the theoretical knowledge for the various methods used in microbiology

CO4: Understand the methods used in the control of microorganisms and various pathogenic diseases

CO5: Acquire knowledge of food microbiology, packaging and fermentation industry

**Part-A**

**6x1=6**

**Answer the following**

**Circle the correct answer**

1. What is the suitable pH range for the proper growth of most of the clinically important bacteria?  
**CO3K2**  
a) pH 4- 5      b) pH 6.5- 7.5      c) pH 7      d) pH 7-10
2. How many magnifying lenses does a compound light microscope contain? **CO1K3**  
a. One      b. Two      c. Three      d. Four
3. What type of microscopy is used for the visualization of internal components within live, unstained specimens? **CO1K4**  
a. Dark-field      b. Phase-contrast  
c. Fluorescence      d. Electron
4. Cyanobacteria belongs to which of the following kingdom? **CO2K3**  
a. Fungi      b. Eubacteria      c. Protista      d. Plantae
5. MacConkey agar is used to **CO4K3**  
a. isolate Gram positive bacteria  
b. differentiate lactose and non-lactose fermenting bacteria  
c. isolate hemolytic bacteria      d. Cultivate fungi
6. If a culture starts with 50 cells, how many cells will be present after five generations with no cell death? **CO4K5**  
a) 200      b) 400      c) 1600      d) 3200

**Part-B**

**3x6=18**

**Answer the following**

7. a. What are Koch's postulates? Explain **CO1K2**  
Or
7. b. Write a short account on the discovery of microorganisms **CO1K1**
8. a. Write the importance of various microbial media **CO3K2**  
Or
8. b. Comment on the morphology of algae **CO2K2**
- 9 a. Differentiate between Gram positive and Gram negative bacteria **CO2K2**  
Or
- 9 b. Write a short account on the nutritional types of microorganisms **CO3K3**

**Part C**  
**Answer the following**

**3x12=36**

- 10 a. Discuss the following microscopy with respect to principle, working and applications  
i) Compound microscope ii) Fluorescence microscope iii) Phase-contrast microscope **CO1K2**  
Or
10. b. Explain the following i) Scanning Electron microscope **CO1K3**  
ii) Transmission Electron microscope
11. a. Give a detailed account on the classification of bacteria **CO2K2**  
Or
11. b. Discuss the characteristics of the following: i) Fungi ii) Viruses **CO3K2**
12. a. Elaborate on the different types of sterilization and plating techniques **CO4K3**  
Or
12. b. Describe the different stages and measurement of microbial growth **CO4K2**

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Staff-in-charge: Dr.D.Kavitha

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