



K. Sambath

Avinashilingam Institute for Home Science and Higher Education for Women
Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD (now MoE)
Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC
Coimbatore - 641 043, Tamil Nadu, India
Continuous Internal Assessment test I- February 2026
Semester IV

Class: II UG
Major: Biochemistry/Biotechnology

Time : 2 hours
Max.Marks : 60

23BBTC04-Microbiology and Industrial Fermentation

Course Outcomes:

- 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

- UV radiation acts by
a. Protein coagulation b. Alkylation c. Thymine dimer formation
d. Oxidation **CO1K4**
- Who is known as the *Father of Microbiology*? **CO1K4**
a. Robert Hooke b. Robert Koch c. Antonie van Leeuwenhoek
d. Edward Jenner
- How many magnifying lenses does a compound light microscope contain? **CO1K3**
a. One b. Two c. Three d. Four
- 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
- Cyanobacteria belongs to which of the following kingdom? **CO2K3**
a. Fungi b. Eubacteria c. Protista d. Plantae
- Antibiotics are produced during which of the following phases? **CO5K3**
a. lag phase b. log phase c. stationary phase d. decline phase

Part-B

3x6=18

Answer ALL Questions

Each answer should not exceed 400 words or two pages

- a. What is germs theory of disease? Explain **CO1K2**
Or
- b. Write a short account on the biogenesis and abiogenesis theory **CO1K1**
- a. Write the importance of culture media for bacteria **CO3K2**
Or
- b. Give a short account on the principles of fermentation **CO2K2**
- a. Describe the microbial staining **CO2K2**
Or
- b. Write a short account on the nutritional types of microorganisms **CO3K3**

Part-C

3x12=36

Answer ALL questions

Each answer should not exceed 800 words or four pages.

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