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

Master's Degree Examination – May 2025
II Semester

Class : I P.G. **Time: 3 Hours**
Major : Biotextiles **Max. Marks : 100**

23MBXC10 Textile Microbiology

Course Outcomes:
CO1: Understand the basics of microbiology and microbial applications in textile field
CO2: Describe the assay of fermentation products and downstream processing
CO3: Differentiate Prokaryotic and eukaryotic cell structure and Outline the different methods of culturing microorganisms
CO4: Identify the nutrient requirements for microbial growth
CO5: Apply microbial pigments and impart antimicrobial finish on textiles

Part A **10 x 1 = 10**
Choose the Correct Answer

1. Louis Pastuer was known as the CO1K1
   a. The father of the nation b. Father of Physics
   c. Father of Bio-Technology d. Father of Microbiology

2. Penicillin was discovered in CO1K1
   a. 1923 b. 2028 c. 1828 d. 1728

3. Carbon plays an important role in CO4K2
   a. Blood Circulation b. Metabolism c. Digestion d Structure of living cells

4. Light is the energy source and carbon dioxide is the carbon source in CO4K2
   a. Photo autotrophs b. Chemoautotrophs c. Photo Heterotrophs d. Chemo Heterotrophs

5. When a culture contains more than one species it is called? CO3K2
   a. Pure b. Mixed c. Complex d. Compound

6. Spreading of microbes with inoculating is called CO3K1
   a. Spreading b. Pouring c. Sterilizing d. Streaking

7. The following enzyme is used for cell disruption. CO2K2
   a. Lysozyme b. Amylase c. Pectinase d. Cellulase

8. The production of desired products is grown in — vessel. CO2K2
   a. Dryer b . Fermenter c. Centrifuge d. Reactor

9. Removal of —-- on textiles is done with enzymes CO5K1
   a. Protruding fiber b. Print c. Design d. Colour

10. Prevention of microbial growth is done with —--- finish CO5K1
    a. Anti-microbial b. Dyeing c. Printing d. Stentering

Part B **5 x 6 = 30**

Answer ALL questions

Each answer should not exceed 400 words or two pages

11.a. Illustrate and enumerate on the function of ProKaryotic cell. CO3K2

(or)

11.b. Illustrate and describe the function of light microscope. CO3K2

12.a. Enumerate on various sterilization techniques used in microbiology. CO1K2

(or)

12.b. Enumerate on types of culture media. CO4K2

13.a. How will you culture anaerobic microbes? CO3K2

(or)

13.b. Compare continuous and batch cultures. CO3K2

14.a. Discuss the assay of fermentation products. CO2K2

(or)

14.b. Discuss on Crystallization and drying process in product isolation. CO2K2

15.a. Analyse the role of microbes in the treatment of dye effluent. CO5K2

(or)

15.b. Identify two methods of softening textile fibers. CO5K2

Part C **5 x 12 = 60**

Answer ALL questions

Each answer should not exceed 800 words or four pages

16.a. Illustrate and elaborate on eukaryotic cell structure and function. CO1K2

(or)

16.b. Illustrate and explain the working of an electron microscope. CO1K3

17.a. Explain about the microbial growth curve and environmental factors that affect microbial growth. CO3K2

(or)

17.b. Explain about physical and chemical methods to control microbial growth. CO2K2

18.a. How will you isolate your culture using various techniques? CO3K2

(or)

18.b. Discuss the methods of preservation and maintenance of pure culture. CO3K2

19.a Enumerate on different methods of cell disruption. CO2K4

(or)

19.b. Sequence the steps used to extract fermented products. CO2K3

20.a. Explain the characteristics, mode of action and types of antimicrobial agents. CO5K2

(or)

20.b. Discuss about the antimicrobial finishes on textiles. CO5K3

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