

2026

ML & MDT

Course Name : Fundamentals of Microbiology

Course Code : MDT-DSC-2014

Full Marks : 45

Time : 2 Hours

The figures in the margin indicate full marks for the questions.

1. Fill in the blanks : 1x5=5
 - a) The father of microbiology is
 - b) The staining technique used to differentiate bacteria into two groups is called staining.
 - c) The instrument used for sterilization under pressure is called.....
 - d) The study of microorganisms is known as.....
 - e) The process of obtaining a pure microbial population is called.....
2. Answer the following questions (*any five*) : 2x5=10
 - a) Name any two shapes of bacteria with examples.
 - b) Differentiate between sterilization and disinfection.
 - c) What is selective media ? Give one example.
 - d) Define pure culture and mixed culture.
 - e) What are autotrophic and heterotrophic bacteria ?
 - f) Define generation time in bacteria.
 - g) What is the principle of fluorescence microscopy ?
3. Answer the following questions (*any four*) : 5x4=20
 - a) Explain the principle and working of phase contrast microscope.
 - b) Describe the bacterial growth curve with phases.

(Turn over)

- c) Describe different types of culture media with examples.
 - d) Explain the differences between gram-positive and gram-negative bacteria in detail.
 - e) Discuss different methods of sterilization by moist heat.
 - f) Write a note on selective and differential media with examples.
4. Answer *any one* of the following questions : 10x1=10
- a) Describe various methods used to control microorganisms through sterilization and disinfection. 5+5
 - b) Describe methods of isolation and maintenance of pure culture. 3+7
 - c) Explain gram staining in detail with its principle, procedure and significance. 5+3+2

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