

Subject Title: Introductory Microbiology

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Unit - I: Unit-I Introduction**Short Questions:**

1. What are microbes? Why microorganisms cannot be studied without help of a microscope?
2. Who two other microbiologists were awarded Noble prize in 1952 along with Alexander Flemming?
3. Briefly describe the event of the discovery of microbial life?
4. Describe Koch postulates?
5. For which contribution Edward Jenner is still remembered?
6. Write short notes on contributions of Iwanovski & Beijerinck?
7. What are Biopesticides?
8. Contributions of Antony Van Leeuwenhoek?
9. Write short notes on Paul Ehrlich?
10. Describe Briefly about "Founder of soil Microbiology"?
11. Autoclave
12. Laminar air flow
13. Filter sterilization
14. Radiation
15. Phenol & Phenol coefficient
16. Alcohol
17. Aldehyde
18. Fumigants
19. Halogens and Hypochlorides
20. Hot air oven
21. **Essay questions:**
22. Write an account on the discovery of microbes & the establishment of biogenesis theory?

23. Write an essay on the development of microbiology during 20th century?
24. Why Pasteur is said to be the "founder of Microbiology"? Describe in detail?
25. Give details of the contributions of Jenner & Flemming in Microbiology?
26. Describe in detail the contribution of Louis Pasteur in microbiology?
27. What is Microbiology? Describe Its Applications in detail?
28. What is an autoclave? Describe its structure and application in the process of sterilization.
29. What is filter sterilization? Describe the methods of filtration used to sterilize biological fluids and air?
30. What are chemical agents? Describe their mode of action in sterilization?
31. What are the different methods of physical sterilization explain briefly?

Unit - II: Microscopy and staining methods

Short Questions:

32. Dark field microscope
33. Phase contrast Microscope
34. Difference between SEM & TEM
35. Difference between bright field & Dark field Microscopes
36. Simple Staining
37. Hanging Drop method
38. Capsule Stainig
39. Flagella Staining
40. Endospore staining
41. Occular & Stage Micrometer

Essay Questions:

43. Give a suitable illustration of a Bright field microscope & Discuss the functions of its essential parts?
44. Discuss the process of the measurement of the size of microbe by bright field microscope with the help of a suitable diagram?
45. Write an essay on Electron Microscopy?
46. Describe in detail the procedure of Differential Staining?

47. Write an essay on Phase contrast microscope?

Unit - III: Classification , Isolation and Identification of Microorganisms

Short Questions:

- 48. Whittaker's Concept
- 49. Domain System of Classification
- 50. Cavalier-Smith Concept
- 51. Merits & Demerits of Five Kingdom Classification
- 52. Bergey's Manual
- 53. Carl Woese's concept
- 54. Growth media.
- 55. Synthetic Media.
- 56. Non-Synthetic Media
- 57. Enrichment Media & Selective Media.
- 58. Differential Media & Transport Media .
- 59. Enrichment media
- 60. Spread plate method & Pour plate method
- 61. Sub-culturing
- 62. Lyophilization & Cryopreservation
- 63. Sand culture & Micromanipulator

64. Essay Questions:

- 65. What are the three Domains of life? Who proposed this system?
- 66. Describe the general characters & reproduction of protozoa in detail?
- 67. Write an essay on general characters of Moulds?
- 68. Write in detail about Microalgae?
- 69. What is isolation? Describe various methods of isolation of pure culture in brief.
- 70. Give an account of preservation of microbial culture.
- 71. Describe the common methods for isolating of pure culture ?

72. Explain different types of Growth media used for culturing microorganism.

Unit - IV: Structure and General Characteristics of Microorganisms

Short questions:

73. Cell Wall

74. Ribosomes

75. flagella

76. TMV

77. HIV

78. Yeast

79. Lambda phage

80. Mycoplasma

81. Rickettsia

82. Essay Questions:

83. What are actinomycetes? Why they are medically important?

84. What is Bacteria? Discuss the general characters of bacteria in detail?

85. Name the characteristics which occur in Archaea but lack in Bacteria?

86. What are the three Domains of life? Who proposed this system?

87. Discuss in detail the general characters of a cyanobacterial cell?

88. Discuss the structure & functions of Mycoplasma?

89. What are Viruses? Give their general characteristics?

90. Describe the structure & multiplication of HIV?

91. Discuss the structure & Multiplication of TMV?

92. What is Yeast? Describe the general characters of yeast in detail?

93. Discuss in detail the ultra structure of Bacterial cell?