

[2½ Hours]

Total Marks: 75]

Note: All questions are compulsory.

Each question carries equal marks.

Draw diagrams wherever necessary.

Q.1 Do as directed. (Any 15)
(15)

1. What is decimal reduction time?
2. Give one example of elements used in culture media.
3. Define- Acid fast bacteria
4. Explain the term 'Phototrophs'
5. Define- Mordant
6. Define- Simple Staining
7. Explain the term 'Pure culture'
8. Define- Compound Microscope
9. _____ is a simple and rapid method for measuring growth on the basis of the turbidity of the culture.
10. What is chromogen?
11. Define- Numerical aperture
12. Give one example of Organisms that can reduce inorganic compounds as electron donors.
13. Tyndallization is also known as _____.
14. Define- Natural Dyes
15. Name the process of destructing microorganisms by burning into the flame of the Bunsen burner.
16. Give one example of substance used to preserve cultures for cryopreservation.
17. Iodine is traditionally used as germicidal agent in a form as _____.
18. State whether true or false.
Bactericidal agents kill viruses.
19. Give one example of gaseous agent that has germicidal activity.
20. The time taken for a population to double in the regular interval of time is called _____.

Q. 2A) What is the resolving power of a microscope? How can resolving power be increased? (08)

Q.2B) Name several differential staining techniques and describe the type of information each provides. (07)

OR

Q.2C) Elaborate on different theories of staining. (08)

Q.2D) What are the underlying principle, advantage and disadvantage of Dark field microscope? (07)

Q.3A) List several different kinds of radiations used for destruction of microorganisms. Comment on mode of action of any two of its examples. (08)

Q.3B) Describe filtration as physical agent for control of micro organisms. (07)

OR

Q.3C) List several halogens & compounds of halogens to control microbial population. Add a note on practical applications of any two such compounds. (08)

Q.3D) Explain in brief the usage and limitations of any four chemical agents for control of micro organisms. (07)

Q.4A) Elaborate on significance of nutritional requirements of micro organisms with respect to Nitrogen, Carbon, Phosphorus, Sulphur, growth factors and trace elements. (08)

Q.4B) Explain the term pure culture. How would you get the pure culture from the mixed population by isolation technique? (07)

OR

Q.4C) How would you enumerate micro organisms indirectly by determining the Nitrogen content and dry weight of the cells? (08)

Q.4D) What is cryopreservation? Explain in detail the method and advantages of cryopreservation. (07)

Q.5 Write short notes on the following. (Any three) (15)

1. Acid and basic dyes
2. Functions of Fixative
3. Incineration
4. Alcohol as antimicrobial agent
5. Synchronous growth