

Anekant Education Society's
Tuljaram Chaturchand College, Baramati
Autonomous

CLASS: F.Y.B.Sc MICROBIOLOGY

PAPERCODE - MICRO-1102

PAPER :II SEMESTER-I

PAPER TITLE: BASIC TECHNIQUES IN MICROBIOLOGY

1 MARK QUESTION:-

1. $1\text{mg} = \dots\dots\mu\text{g} = \dots\dots\text{gm}$
2. $1\mu\text{g} = \dots\text{mg} = \dots\dots\text{gm}$
3. $1\text{m} = \dots\text{cm} = \dots\dots\mu\text{m}$
4. $1\mu\text{l} = \dots\text{ml} = \dots\text{lit}$
5. $1\text{ml} = \dots\dots\mu\text{l} = \dots\text{lit}$
6. In bright field microscope, object appearsand background appears....
7. In dark field microscope, object appearsand background appears....
8. Negative staining is also called as.....
9. Rubber gloves can be sterilized in
10. In electron microscope, source of illumination is....
11. Define microscope
12. Enlist types of microscope
13. Define numerical aperture
14. What are the different kinds of lenses used in microscope
15. What is the function of condenser lense
16. What is the function of iris diaphragm
17. Name the condensers used in dark field microscope
18. Light source used in electron microscope
19. Define stain
20. Define acidic stain
21. Define basic stain
22. Enlist the types of stain
23. Define Sterilization
24. Define Disinfection
25. Mention the pressure, time and temperature regime for sterilization in autoclave
26. State true or false---
 - 1] In an autoclave moist heat is used for sterilization
 - 2] Dry heat has more power than moist heat

- 3] In electron microscope, lenses are made up of glass
- 4] Congo red is an example of acidic stain
- 5] Negative staining is also called as relief staining
- 6] In Gram staining acetone alcohol mixture act as mordant
- 7] Gram positive bacteria contains high amount of peptidoglycan in their cell wall
- 8] Disinfection is the process of partial sterilization

2 MARK QUESTIONS:-

1. Give role of cedar wood oil in microscopy
2. Define magnification
3. Define resolving power of microscope
4. Name any two acidic stain
5. Name any two basic stain
6. Define accentuator with example
7. Define mordant with example
8. Define fixatives with example
9. Write the names of illumination source of light used in fluorescence microscope
10. Give principle of fluorescence microscope
11. Name the barriers present in fluorescence microscope
12. What is astigmatism
13. Give role of decoloriser in staining
14. What is the principle of monochrome staining
15. What is the principle of negative staining
16. What is the principle of Gram staining
17. Name the methods used for capsule staining
18. Name any two heavy metals showing inhibition of bacterial growth
19. Enlist types of bacteriological filters
20. Name the halogen compounds used for sterilization
21. Give role phenol in sterilization process
27. Give examples of quaternary ammonium compounds
22. Define phenol coefficient
23. Give role of U.V. radiation in sterilization

4 MARK QUESTIONS:-

1. Explain types of objective lenses
2. Write a note on magnification
3. Resolving power of microscope
4. Numerical aperture
5. Explain U.V. radiation as sterilizing agent
6. Explain heat as sterilizing agent
7. Give short note on spherical aberrations

8. Give short note on chromatic aberrations
9. Explain comma type aberration
10. Give short note on astigmatism
11. Give short note on mordant
12. Give short note on accentuators
13. Enlist the factors affecting effectiveness of disinfectant
14. Give difference between dry heat and moist heat sterilization

6.MARK QUESTIONS:-

1. Explain types of eye piece lenses
2. Explain monochrome staining
3. Explain relief staining
4. Explain differential staining
5. Explain acid fast staining
6. Give characteristics of ideal disinfectant
7. Explain method of capsule staining
8. Comment on gaseous sterilizers
9. Explain quaternary ammonium compounds as disinfectant
10. Give short note on phenol coefficient
11. Explain sterilization by filtration
12. Give differences between SEM and TEM
13. Explain types of condensers used in dark field microscopy with ray diagram

LONG ANSWER QUESTIONS:-

1. Describe principle, working and applications of bright field microscope with suitable ray diagram
2. Describe principle, working and applications of dark field microscope with suitable ray diagram
3. Describe principle, working and applications of fluorescence microscope with suitable ray diagram
4. Describe principle, working and applications of electron microscope with suitable ray diagram
5. Explain in detail all types of aberrations present in lenses
6. What is differential staining? Describe Gram staining in details with principle and procedure
7. Explain sterilization by autoclaving with respect to principle, working and applications
8. Explain different methods of physical sterilization
9. What is disinfectant? Describe any four chemical sterilizing agents with their mechanism of action