

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(First Semester)

Branch – MICROBIOLOGY

PRINCIPLES OF MICROBIOLOGICAL METHODS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Refractive index of air is
(i) 0.5 (ii) 1.00
(iii) 0.75 (iv) 1.25
- 2 Decolorizer used in Acid fast staining is
(i) 10% H₂SO₄ (ii) 15% H₂SO₄
(iii) 05% H₂SO₄ (iv) 20% H₂SO₄
- 3 In autoclave, the principle involved is
(i) Dry Heat (ii) High Temperature
(iii) Steam Under pressure (iv) Low Temperature
- 4 Most effective bactericidal wavelength of UV rays
(i) 250-230nm (ii) 280 -260nm
(iii) 300-280nm (iv) Above 300nm
- 5 A culture medium the exact composition of which is not known was called as
(i) Simple (ii) Complex
(iii) Defined (iv) Natural

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Explain the working mechanism and application of compound microscope.
OR
b Explain the working mechanism and application of dark field microscope.
- 7 a How to perform endospore staining? Explain with principle and procedure.
OR
b Illustrate the principle and procedure of negative staining.
- 8 a What are the advantages and disadvantages of sterilization by filtration?
OR
b Explain the role and mechanism of radiation in control of microorganisms.
- 9 a How do you determine the effectiveness of antiseptics and disinfectants? Explain in brief.
OR
b Write in detail the chemical nature, mode of action and applications of phenol and phenolics.

Cont...

10 a Discuss the method of solid and liquid culture media preparation.

OR

b Explain about lyophilization method and its advantages.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11 a Discuss in detail about structure and function of Phase contrast microscope with neat sketch.

OR

b Discuss in detail about working mechanism and application of TEM.

12 a What are the types of staining techniques? Explain in detail capsule staining .

OR

b Write about the technique used to determine the bacterial motility.

13 a What is sterilization? Explain in detail about the heat sterilization.

OR

b What is Pasteurization? Explain their type and applications.

14 a Explain the mode of actions and uses of heavy metals and halogens .

OR

b Explain the mode of actions and uses of aldehydes and detergents.

15 a Describe various methods employed for purification of microorganisms.

OR

b How is culture media prepared in microbiology Explain in detail about its types?

Z-Z-Z

END