

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2018  
(First Semester)

Branch - MICROBIOLOGY

**PRINCIPLES OF MICROBIOLOGICAL METHODS**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks (10x1 = 10)

- 1 Best resolution attained by a light microscope is  
(i) 0.2 nm (ii) 0.2 pm  
(iii) 0.5nm (iv) 2nm
- 2 In which type of microscopy the microorganisms is likely to show varying degrees of darkness within the cell?  
(i) dark-field (ii) bright field  
(iii) phase contrast (iv) electron
- 3 Which is the coloring agent used in biologicals?  
(i) Stain (ii) Dye  
(iii) Chromosphere (iv) Auxochrome
- 4 Which of the following is not a basic stain?  
(i) \* Crystal violet (ii) Methyl violek  
(iii) Safranin (iv) Nigrosin
- 5 Temperature required for pasteurization is  
(i) Above 150° C (ii) Below 100° C  
(iii) 110°C (iv) None
- 6 Lyophization means  
(i) Sterilization (ii) Freeze-drying  
(iii) Burning to ashes (iv) Exposure to formation
- 7 Which of the following disinfectants act by disrupting microbial membranes?  
(i) Cationic detergents (ii) Halogens  
(iii) Heavy metals (iv) Aldehydes
- 8 Bacterial concentration of phenol is  
(i) 0.25% (ii) 0.5%  
(iii) 0.75% (iv) 1%
- 9 In pour-plate method, the medium should be maintained at what temperature?  
(i) 37° C (ii) 67° C  
(iii) 45° C (iv) 0°C
- 10 The solidifying agent commonly used in preparation of media is  
(i) Agar (ii) Silica gel  
(iii) Both (a) and (b) (iv) None of these

**SECTION - B (35 Marks)**

Answer **ALL** Questions

**ALL** Questions Carry **EQUAL** Marks (5 x 7 = 35)

- 11 a Comment on resolving power and magnification.  
OR  
b What are the components of compound microscope? Explain.
- 12 a Briefly describe the hanging drop techniques.  
OR  
b How is acid fast staining different from gram staining? Explain.
- 13 a Briefly explain the Millipore filter.  
OR  
b What is heat sterilization? Explain.
- 14 a List out the potency of chemical agents.  
OR  
b Briefly describe the role of aldehydes and oxidizing agents.
- 15 a What is differential medium? Explain.  
OR  
b Comment on pour plate and spread plate method?

**SECTION - C (30 Marks!)**

Answer any **THREE** Questions

**ALL** Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Write the principle, mechanism and applications of phase contrast microscope.
- 17 Write the principle, mechanism and applications of Gram staining.
- 18 Enumerate the applications of physical agents for controlling micro organisms.
- 19 Describe the mechanism action of chemical agents.
- 20 How will you preserve the microbial culture? Explain.

Z-Z-Z

END