

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2023  
(Second Semester)

Branch – BIOTECHNOLOGY

**FUNDAMENTALS OF MICROBIOLOGY**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1. What is the minimum distance required for the human eye to focus any object?  
(i) 11 cm                      i) 25 cm                      (iii) 32 cm                      (iv) 42 cm
2. The size of protozoa is in the range of ..... in diameter.  
(i) 5 to 250 um                      (ii) 5 to 250 nm  
(iii) 5 to 250 mm                      (iv) 5 to 250 angstrom
3. Lag phase is also known as  
(i) Period of initial acclanatzation                      (ii) Transitional period  
(iii) Generation time                      (iv) None of these
4. The family of man in the taxonomic category is  
(i) Poaceae                      (ii) Muscidae  
(iii) Hominidae                      (iv) Anacardiaceae
5. What percent of total global carbon does the atmosphere contain?  
(i) 5 %                      (ii) 50 %                      (iii) 1%                      (iv) 20 %

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

6. (a) Write short notes on Sterilization techniques using Ultraviolet Light radiation.  
{OR}  
(b) Write the principles and procedure of simple staining techniques.
7. (a) Explain bacteria cell structure and its Organelles.  
{OR}  
(b) Write short notes on Viroids.
8. (a) Write a short note on microbial nutrition.  
{OR}  
(b) Explain spread plate method of microbial inoculation.

Cont...

9. (a) Review the major characteristics used in taxonomy in microbiology.  
{OR}  
(b) Explain Antimicrobial agents.
10. (a) Write short notes on biocontrol agents.  
{OR}  
(b) Expound the Phosphorus Cycle with suitable flowchart.

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11. (a) Highlight the scope of microbiology.  
{OR}  
(b) Briefly explain phase contrast microscope and their applications.
12. (a) Give detailed account on shapes and size of Bacteria.  
{OR}  
(b) Briefly explain pigmentation in algae.
13. (a) Explain the phases of bacterial growth curve with necessary graphical interpretation.  
(b) Describe the factors affecting bacterial growth.
14. (a) Write an essay on the synthetic chemotherapeutic agent.  
{OR}  
(b) List out different methods used for evaluation of Disinfectant. Write in detail about the Phenol Coefficient Method.
15. (a) Describe Carbon Cycle.  
{OR}  
(b) Explain the microbial degradation of the cellulose degradation.

Z-Z-Z

END