

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022  
(Fifth Semester)

Branch – BOTANY

MICROBIAL BIOTECHNOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 x 1 = 10)

1. The bacterial culture prepared by pure culture method is  
(i) Inoculum (ii) Suspension  
(iii) Dilution (iv) None of these
2. Basic principle in industrial biotechnology is  
(i) Suitable growth conditions (ii) Fermentation  
(iii) Providing aseptic conditions (iv) All of these
3. Batch fermentation is also called  
(i) Closed system (ii) Open system  
(iii) Fed-Batch system (iv) Sub-merger system
4. Autoclaving is carried at  
(i) Dry heat (ii) Atmospheric pressure  
(iii) 120°C (iv) All of these
5. In the industrial production of streptomycin, the secondary metabolite or byproducts is  
(i) Vitamin – B12 (ii) Vitamin – C  
(iii) Vitamin – B6 (iv) Ethanol
6. The pH to be maintained for the production of penicillin is  
(i) 7.5 (ii) 6.5  
(iii) 8.0 (iv) 5.0
7. Biogas producing bacteria are called as  
(i) Archaeobacteria (ii) Methanogens  
(iii) Eubacteria (iv) Cyanobacteria
8. Paddy straw mushroom is  
(i) *Agaricus bisporous* (ii) *Pleurotus sajourkaju*  
(iii) *Volvariella volvacea* (iv) *Auricularia* sp.
9. Which of the following in the medium inhibits the synthesis of amylase?  
(i) Glucose (ii) Lactose  
(iii) Galactose (iv) Maltose
10. The microorganism used as a biocontrol agent against caterpillars of butterflies is  
(i) *Trichoderma* (ii) *Streptococcus*  
(iii) *Bacillus thuringiensis* (iv) *Saccharomyces cerevisiae*

Cont...

**SECTION - B (35 Marks)**

Answer ALL Questions

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

11. a) Outline preservation of microorganism.  
Or  
b) State the history of Industrial Biotechnology.
12. a) Explain the method of sterilization of media.  
Or  
b) Describe the structure of batch fermentor.
13. a) Describe the process of citric acid production.  
Or  
b) Narrate about streptomycin production.
14. a) Write a explanatory notes on SCP.  
Or  
b) Show the method of spawn production.
15. a) Explain about biopesticides.  
Or  
b) State about B<sub>2</sub> production.

**SECTION - C (30 Marks)**

Answer any THREE Questions

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

16. Explain different aspects of screening techniques of microorganism.
17. Define fermentor. Explain the general design of a fermentor.
18. Highlight the method of ethanol production.
19. Write an essay on sewage treatment.
20. Discuss about the process of amylase production.

Z-Z-Z

END