

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2023
(Fifth Semester)

Branch – BOTANY

MICROBIAL BIOTECHNOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions
ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Which of the following is NOT the technique of preservation?
(i) Storage on agar slants (ii) Storage under liquid nitrogen
(iii) Dried cultures (iv) Storage in water
- 2 Which of these is not a product of fermentation?
(i) Oxygen (ii) Carbon dioxide
(iii) Lactate (iv) Ethanol
- 3 What type of fermentation is observed in yeasts?
(i) Pyruvic fermentation (ii) Lactic acid fermentation
(iii) Alcoholic fermentation (iv) Acrylic fermentation
- 4 What do we collectively call the biogas producing bacteria?
(i) Methanogens (ii) Archaeobacteria
(iii) Cyanobacteria (iv) Eubacteria
- 5 Which of the following fungi produces α -amylase?
(i) *Bacillus subtilis* (ii) *Penicillium*
(iii) *Bacillus diastaticus* (iv) *Bacillus megaterium*

SECTION - B (15 Marks)

Answer ALL Questions
ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a State the goals of industrial biotechnology.
OR
b Explain about the inoculum preparation.
- 7 a Sketch the basic design of a fermentor.
OR
b Explain the solid-state fermentation.
- 8 a Summarize the uses of lactic acid and citric acid.
OR
b Explain the steps involved in wine production.
- 9 a Summarize the steps involved in SCP production.
OR
b Explain the various types of edible mushroom.
- 10 a State the types of microbial protease enzyme.
OR
b Classify the enzyme amylase.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Summarize the different types of media are used in inoculation.
OR
b Elucidate the important primary screening techniques.
- 12 a Highlight the various fermentation process.
OR
b Categorize the various types of media sterilization.
- 13 a Discuss in detail about alcohol production.
OR
b Enumerate on penicillin production.
- 14 a Enumerate the major stages of mushroom cultivation.
OR
b Discuss about biogas production.
- 15 a Elucidate on the fermentation process for Cellulases production and its applications.
OR
b Summarise about vitamin B12 production.

Z-Z-Z

END