

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**MSc DEGREE EXAMINATION MAY 2022
(Second Semester)**

Branch – APPLIED MICROBIOLOGY

FERMENTATION AND BIOPROCESS TECHNOLOGY

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 liquid nitrogen storage temperature?
(a)-196°C (b)-296°C
(c)-96°C (d)-396°C
2. Which of the device used for incorporation of sterile air in to medium?
(a) Sensors (b) Sparger
(c) Impeller (d) Baffle
3. Which microorganism is best adapted for solid state fermentation?
(a) Filamentous fungi (b) Bacteria
(c) Yeast (d) Cyanobacteria
4. Indicate the byproduct of whey is
(a) Corn industry (b) Cane industry
(c) Leather industry (d) Dairy industry
5. Which precursor for Vitamin B12 fermentation medium is added with?
(a) Cobalt chloride (b) Polyphosphate
(c) Phenylacetic acid (d) Bromide

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a Classify the different media and materials used in industrial microbiology.
OR
b Explain about the auxonography.
- 7 a Discuss about the spargers.
OR
b Evaluate the scale up process.
- 8 a Explain about the Solid state fermentation.
OR
b Classify the chromatography techniques.
- 9 a Discuss the industrial production of acetic acid.
OR
b Explain about the cheese production.
- 10 a State the WHO norms.
OR
b Discuss about the biosensors.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11 a Enumerate the different strain improvement methods of industrially important microorganisms.

OR

b Develop the media formulation for industrial fermentation process.

12 a Design a fermentor and its various parts uses.

OR

b Elucidate the role of computer in fermentation technology.

13 a Justify the solid liquid separation techniques in downstream processing.

OR

b Interpret the cell removal by precipitation, filtration and centrifugation.

14 a Enumerate the Industrial production of alcoholic beverages.

OR

b Analyze the microbial transformation of sterol components.

15 a Formulate the microbial production of SCP.

OR

b Justify the ISO certification concept.

Z-Z-Z

END