

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

**BSc DEGREE EXAMINATION DECEMBER 2024
(Fifth Semester)**

Branch – BIOTECHNOLOGY

**MAJOR ELECTIVE COURSE – I :
INDUSTRIAL AND MICROBIAL 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 not an antifoaming agent?

i) Sodium lauryl sulfate	ii) Silicones
iii) Glycols	iv) Alkyl polyacrylates
- 2 Why the shake flask is not continuously preferred?
 - i) Because of resistance to microbial growth
 - ii) Because of increase rate of contamination
 - iii) Because of imprecise control of temperature
 - iv) Because of unlimited stirring
- 3 Which of the following is a downstream process?

i) Product recovery	ii) Screening
iii) Media formulation	iv) Sterilization of media
- 4 Which of the following is the most common method for citric acid production?

i) Solid-state fermentation	ii) Submerged fermentation
iii) Surface fermentation	iv) Surface adhesion fermentation
- 5 Yellowish tinge in milk can be attributed to which of the following?

i) Carotene	ii) Water
iii) Riboflavin	iv) Melalin

SECTION - B (15 Marks)

Answer **ALL** Questions

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

- 6 a Analyze the factors that affect fermentation process.
OR
b How will you improve microbial strains for fermentation process?
- 7 a Discuss the principles of microbial growth.
OR
b Explain Thermal death kinetics.
- 8 a Why should separate foam during downstream processing?
OR
b Depict the flow chart of lyophilisation process.
- 9 a Analyze the scheme of industrial production of lactic acid.
OR
b Mention the substrate and inoculums for acetone production.
- 10 a State the significance of SCP.
OR
b Expound the methodology of beer production.

Cont...

SECTION -C (30 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks

(5 x 6 = 30)

- 11 a Summarize the strategies of fermentation medium optimization.
OR
b Discuss about the types of bioreactors.
- 12 a Distinguish between solid state and submerged fermentation.
OR
b Summarize the importance of media formulation in fermentation process.
- 13 a How is fermented foods tested for safety?
OR
b Enlist the types of filtration in downstream process.
- 14 a Give a schematic illustration of the industrial production of citric acid.
OR
b Explain the microbial production of amylase.
- 15 a Explain the production process of bread.
OR
b How is single cell protein produced in the laboratory?

Z-Z-Z

END