

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2022
(Sixth Semester)

Branch – MICROBIOLOGY

INDUSTRIAL MICROBIOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 x 1 = 10)

- 1 Which components of cells help in the manufacturing of new biological products?
(i) Carbohydrates (ii) Proteins
(iii) Lipids (iv) Nucleic acids
- 2 Which of the following procedures has a great application of strain development?
(i) rDNA technology (ii) Conjugation
(iii) Transduction (iv) Transformation
- 3 The agitator is required to -----
(i) Provide air (ii) Mixing objectives
(iii) Purify the products (iv) Sterilize the media
- 4 The Tower fermenter was first described for -----
(i) Amylase production (ii) Citric acid production
(iii) Cheese production (iv) Beer production
- 5 The culture medium should not -----
(i) Be sterilized (ii) Be cheap and readily available
(iii) Contain desired products (iv) Allow undesired products
- 6 For laminar flow, Reynolds number should be
(i) Less than 2300 (ii) Equal to 2300
(iii) Greater than 2300 (iv) Less than 4300
- 7 Which of the following is not a criterion for the choice of the recovery process?
(i) Location of the product (ii) Price of the product
(iii) Use of the product (iv) Source of organism
- 8 Which of the following is not the method of cell disruption?
(i) Sonication (ii) Homogenization
(iii) Streaking (iv) Chemical Treatment
- 9 What is the precursor of penicillin?
(i) Benzylpenicillin (ii) Isopenicillin N
(iii) phenylacetic acid (iv) L- α aminoadipic acid
- 10 Which of the following processes encourages grain germination?
(i) Malting (ii) Milling
(iii) Mashing (iv) Boiling

Cont...

SECTION - B (35 Marks)Answer **ALL** Questions**ALL** Questions Carry **EQUAL** Marks (5 x 7 = 35)

- 11 a Narrate in short about preservation of Industrial microbes.
OR
b Briefly explain about how rDNA technology is used for getting efficient strain.
- 12 a Illustrate in brief about types of Sparger with neat sketches.
OR
b Define in brief account on principle and applications of Membrane bioreactor.
- 13 a Explain about the different Agro Carbon Sources used for fermentation media.
OR
b What is the Froude number and mention its significance?
- 14 a Discuss in brief about physical cell disruption methods for product recovery.
OR
b Explain in detailed account on Liquid-Liquid interactions.
- 15 a Define in brief about the production process of Glutamic acid.
OR
b Give a critical note on Production of any one alcoholic beverage.

SECTION - C (30 Marks)Answer any **THREE** Questions**ALL** Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Write a detailed account on the importance of Secondary Screening.
- 17 Briefly explain about any one Commercial fermentor with a neat diagram.
- 18 What do you mean by power number? Explain with suitable explanation.
- 19 Illustrate an account on suitable methods adopted for High molecular weight product recovery.
- 20 Describe in detailed note on Industrial Production and application of citric acid.

Z-Z-Z

END