

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BVoc DEGREE EXAMINATION MAY 2024
(Fifth Semester)

Branch – FOOD PROCESSING TECHNOLOGY

FOOD FERMENTATION 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 microorganisms are commonly involved in fermentation?
(i) Viruses (ii) Bacteria and yeast
(iii) Fungi and algae (iv) Protozoa
- 2 Which nutrient is crucial for microbial growth in fermentation processes?
(i) Water (ii) Carbon dioxide
(iii) Nitrogen (iv) Oxygen
- 3 What is a characteristic of a trickle bed reactor?
(i) Continuous gas bubbles (ii) Liquid flowing over a packed bed
(iii) No liquid phase (iv) Packed particles without flow
- 4 Which microorganism is used in the production of baker's yeast?
(i) Saccharomyces cerevisiae (ii) Lactobacillus acidophilus
(iii) Escherichia coli (iv) Aspergillus niger
- 5 Choose the primary microorganism involved in the fermentative production of citric acid
(i) Escherichia coli (ii) Saccharomyces cerevisiae
(iii) Lactobacillus delbrueckii (iv) Aspergillus niger

SECTION - B (15 Marks)

Answer ALL Questions

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

- 6 a Explain the advantages of fermentation in the preservation of food.
OR
b Bring out the examples of fermented foods and their specific nutritional benefits.
- 7 a Outline the basic components of a fermentation medium and their functions.
OR
b Outline the methods used for sterilizing fermentors and vessels.
- 8 a Compare fluidized bed reactors with other types of reactors in terms of mixing and heat transfer.
OR
b Summarize the steps involved in whole broth processing.
- 9 a Compare the fermentation methods of idly and dhokla.
OR
b Explain the concept of single-cell protein and its potential benefits.
- 10 a Explain the fermentation process involved in lactic acid production.
OR
b Outline the key steps involved in the fermentation process for the production of dextran and xanthan?

Cont...

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks

(5 x 6 = 30)

- 11 a Discuss the chemical changes that occur in food during fermentation.
OR
b Compare and contrast ethyl alcoholic, lactic acid and acetic acid fermentation.
- 12 a Analyze the significance of process optimization in improving fermentation efficiency.
OR
b Summarize the concept of batch fermentation. What are the advantages and limitations of using a batch process in industrial fermentations?
- 13 a Enumerate the main differences between submerged culture and solid substrate fermentation.
OR
b Compare the advantages and disadvantages of chromatography and electrophoresis in downstream processing.
- 14 a Outline the fermentation process involved in yeast production.
OR
b Classify the different types of fermented milk products based on the processing methods.
- 15 a Compare the fermentation strategies for producing erythromycin and penicillin.
OR
b Compare the fermentation processes for GOS and FOS production, highlighting their similarities and differences.

Z-Z-Z

END