



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**M.Sc. DEGREE EXAMINATION – FOOD CHEMISTRY AND FOOD PROCESSING**

**THIRD SEMESTER – NOVEMBER 2019**

**18PFP3ID01 – FOOD BIOTECHNOLOGY**

Date: 04-11-2019

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

**Part A**

**Answer ALL the questions.**

(10 x 3 =30 marks)

1. Differentiate solid state and submerged fermentation.
2. Highlight the role of fungal enzymes used in food industries.
3. List the edible mushroom varieties with its nutritional value.
4. Mention the role of bio colors in pre and probiotics.
5. What are homolactic and heterolactic fermentation process?
6. Name any three natural toxins in food.
7. What are algae? Give any two examples of algae used as food.
8. Define a nutraceutical.
9. What is HACCP?
10. Define term passage.

**Part B**

**Answer the following questions**

(5 x 8 = 40 marks)

11. a. Discuss the batch fermentation process.  
(Or)  
b. Describe the stages involved in fermentation, with graphical representation,
12. a. Enumerate the applications of fermentation technique in amino acids production and highlight the suitable methods adopted for separating such amino acids  
(Or)  
b. Write a note on fermented vegetables.
13. a. Elaborate on the role of fungi as edible foods.  
(Or)  
b. Give a brief note on Spirulina and its nutritional value.
14. a. Write a short note on heavy metal pollution and their toxic residues in food.  
(Or)  
b. Explain the term mycotoxin. Write a brief note on their health hazards and its control.

15. a. What are the advantages and disadvantages of producing genetically modified foods?

(Or)

b. With the help of an illustration explain the production of Bt brinjal through *Agrobacterium* gene transfer.

### Part C

**Answer any two questions.**

(2 x 15 = 30 marks)

16. Explain the following

- i) Biochemical mechanism of fermentation with its types.
- ii) Spawn production and biotechnological approach on strain selection.

17. Write a detailed note on the following.

- i) Stability of agar and alginate gels
- ii) Applications of carrageenan in foods.

18. Discuss the importance of micro and macro algae and their applications in food biotechnology.

19. Give a detailed account on the production of golden rice with the help of a diagram.

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