



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

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

FIRST SEMESTER – NOVEMBER 2016

**16PFP1MC03 - FOOD MICROBIOLOGY**

Date: 07-11-2016  
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

**Part A**

**Answer ALL the questions.**

**10 x 2 =20 marks**

1. Define food microbiology.
2. What are the two most commonly adopted methods for water treatment?
3. Classify food biodeterioration.
4. Why do spoilage reactions occur more rapidly in fish than meat?
5. Define emerging diseases as given by WHO. Give four suitable examples.
6. Write down the most important factors contributing to the occurrence of food borne diseases.
7. Define zymology and fungiculture.
8. Mention the beneficial role of mold culture in cheesemaking.
9. What is the latest advancement in microbiological testing recently developed by IIT Madras?
10. Give any four differences between conventional and rapid methods for detection of food borne pathogens.

**Part B**

**Answer ANY EIGHT questions.**

**8 x 5= 40 marks**

11. Discuss the scope and contributions of microbiology in the food industry.
12. How microorganisms are grouped on the basis of their temperature and oxygen requirements?
13. Write short notes on Indicator organisms.
14. How can air and food handler contamination influence spoilage and pathogenesis in bakery products?
15. Describe Quorum sensing.
16. Discuss microbial spoilage of spices, fruits and vegetables.
17. i) What are the characteristics of food infections and food intoxications?  
ii) Discuss the characteristics of any two common bacterial food infections as reported by CDC.
18. Briefly describe the importance of yeast in production of bread.
19. i) How is citrate metabolized to produce diacetyl by some lactic acid bacteria?  
ii) Discuss the role of microbes in texture formation of Swiss cheese.
20. Write short notes on health benefits and characteristics of an effective probiotic in a pack of probiotic lassi.
21. Discuss the sampling plan, procedure and uncertainty of sampling in microbial testing of foods.
22. Explain spiral plate technique in a food microbiology laboratory.

### Part C

Answer ANY FOUR questions.

4 x 10 = 40 marks

23. i) List the intrinsic and extrinsic factors necessary for growth of microorganisms in food and discuss the effect of water activity on microbial growth and survival. (6 marks)
- ii) Differentiate between the growth pattern of a mesophilic organism at 37<sup>0</sup>C and 10<sup>0</sup>C (4 marks)
24. Discuss microbial spoilage of milk and milk products.
25. i) Molds can grow on fruits, vegetables, cereal grains, peanuts, and spices at different stages of their production and processing. What concerns should consumers, regulatory agencies? and food processors have with regard to mycotoxins for the use of these products in foods? (5 marks)
- ii) Explain marine algal poisoning of sea foods. (5 marks)
26. Describe the sequential growth of lactic acid bacteria during the natural fermentation of sauerkraut.
27. There may not be enough animal proteins to feed the growing human population .Discuss the role and production of Single cell proteins in this regard.
28. Elaborate on the common traditional methods and the mathematical methods that have been developed to predict growth of pathogenic and spoilage microorganisms in foods and enhance shelf life .

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