LS2JPHC600 Reg. No. | | | | | | | | |

ST ALOYSIUS (DEEMED TO BE UNIVERSITY)

MANGALURU

SCHOOL OF LIFE SCIENCES
(PG PROGRAMME)

Semester III – P.G. Examination –M.Sc. Food Science Nutrition and Dietetics

October/ November - 2025

FOOD MICROBIOLOGY

Time: 2 ½ hrs. **Max Marks: 60**

Note: Draw neat labeled diagrams/schematic sketches/structures wherever necessary.

I. Write short notes on any FIVE of the following. (5x2=10)

1. Distinguish between Pasteurization and Sterilization of foods
2. write a note on secondary metabolites
3. Analyze the role of pests, such as insects and rodents, as a source of microorganisms in food.
4. Who is the Father of Microbiology?
5. PCR
6. Describe how improper storage conditions can lead to spoilage in cereal products.

II. Write explanatory notes on any SIX of the following: (6x5=30)

7. Explain Genotypic Identification of Microorganisms
8. Explain microflora of meat products with examples
9. Describe the steps they can take to detect and prevent aflatoxin contamination.
10. Discuss on micro-flora of milk itsproducts with examples
11. Discuss the important features of food poisoning
12. What is Ciguatera Fish Poisoning? Explain with examples
13. Name two common food-borne viruses that can cause gastrointestinal illness in humans.

III. Answer any TWO of the following: (2 x10=20)

14. Compare and contrast the regulatory frameworks and enforcement mechanisms of the FDA and FSSAI.
15. Explain in detail taking an example about emerging food borne pathogens and recent food borne disease outbreaks.
16. Discuss on theories of abiogenesis and biogenesis with examples.

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Semester III – P.G. Examination – M.Sc. Food Science Nutrition and Dietetics

October/ November - 2025

Nutraceuticals and Functional foods in Human Health

Time: 2 ½ hrs. **Max Marks: 60**

Note: Draw neat labelled diagrams/schematic sketches/structures wherever necessary.

I. Write short notes on any FIVE of the following. (5x2=10)

1. Write about regulatory issues of nutraceuticals
2. Define functional foods.
3. Write a short note on the stability and storage of neutraceuticals
4. What is epigenomics?
5. List any three probiotic strains commonly used in gut health.
6. Outline the stages of intestinal microbiota development in infants and explain how it progresses by the second year.

II. Write explanatory notes on any SIX of the following: (6x5=30)

7. Analyze the regulatory challenges faced by probiotic products in the market. What impact do these challenges have on consumer access?
8. Discuss the applications of functional foods in health promotion.
9. Explain the sources and health benefits of carotenoids.
10. How can nutraceuticals be utilized to support nutrition cancer patients? Provide specific examples.
11. Analyse the role of short chain fatty acids (SCFAs) produced by gut bacteria and how they influence metabolic health.
12. Write a note on the mechanism of action of Prebiotics
13. Explain the role of pre and probiotics in inflammatory bowel diseases.

III. Answer any TWO of the following: (2 x10=20)

14. Discuss the role of marine and insect-derived nutraceuticals.
15. Explain the structure, food sources, and nutraceutical applications of phytosterols, and phytoestrogens.
16. Discuss the role of omega-3 fatty acids as a nutraceutical in managing cardiovascular health. What evidence supports its effectiveness?

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