



**SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH
(A DEEMED TO BE UNIVERSITY)**

**Integrated B.Sc.-M.Sc. Clinical Nutrition and Dietetics (CND)
Fourth Year, Semester- VII, March 2026 Examination**

Time- 3:00 Hrs

[Max Marks: 100]

**FOOD TOXICOLOGY
QP Code:N7540**

*Your answer should be specific to the question asked
Draw neat labeled diagrams wherever necessary*

I. LONG ESSAY

2X20= 40 Marks

1. Define toxicity, Dose and Response. Describe the biological factors that influence toxicity.
(5+15)
2. Explain the formation of N-nitrosamine and Acrylamide during food processing. (10+10)

II. ESSAY

6X10=60 Marks

3. Define distillation and explain the various standard distillation methods for determination of toxicants
4. Explain the concept of NOEL, NOAEL, BMD and LO(A)EL
5. Explain the dietary guidelines for cancer prevention
6. Explore goiter, lathyrism and their linkage to foodborne toxicants.
7. Explain the intoxication response in local or systemic, immediate or delayed, and reversible or irreversible levels
8. Explain the toxicity of mushrooms alkaloids, phenolic compounds, protease inhibitors and phytate



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**FUNCTIONAL FOODS AND NUTRACEUTICALS
QP Code: N7550**

*Your answers should be specific to the question asked
Draw neat labelled diagrams wherever necessary*

I. LONG ESSAY

2X20=40 Marks

1. Define dietary supplements. List two types of dietary supplements. Explain the regulation of dietary supplements. Discuss their significance in disease management. (2.5 + 2.5 + 8 + 7 = 20 marks)
2. Define terpenoids. Mention two examples. Explain their chemical composition and function. Discuss their role in improving health outcomes. (2.5 + 2.5 + 8 + 7 = 20 marks)

II. ESSAY

6X10=60 Marks

3. Explain the relationship between nutritional supplementation and gene expression (Nutrigenomics).
4. Discuss the role of glucosinolates in cancer prevention and their biochemical mechanism.
5. Define herbal functional food beverages and describe their benefits in disease prevention.
6. Explain the contribution of organosulfur compounds to disease prevention and immune support.
7. Discuss the role of probiotics and prebiotics in gut health and their symbiotic effects.
8. Describe the pharmacology of plant-derived nutraceuticals and their therapeutic applications.



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[Max Marks: 100]

NUTRITIONAL GENOMICS

QP Code: N7560

*Your answer should be specific to the question asked
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I. LONG ESSAY

2 X 20 = 40 Marks

1. Explain the integration of genomics, metabolomics, and bioinformatics in personalized nutrition
2. Discuss the role of dietary components in epigenetic modulation for cancer prevention including DNA methylation, histone modifications, miRNAs

II. SHORT ESSAY

6 X 10 = 60 Marks

3. Discuss the role of FTO, MC4R, and LEP genes in obesity with gene-environment interactions.
4. Explain the molecular mechanisms of calorie restriction in extending lifespan.
5. Describe the role of vitamin D receptor polymorphisms in health and disease.
6. Explain how maternal nutrition affects epigenetic programming in offspring
7. Discuss the role of HDAC inhibitors from diet in neurodegenerative diseases.
8. Explain the relationship between gut microbiota, SCFAs, and epigenetic regulation.



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Max Marks: 100

FOOD MICROBIOLOGY

QP Code: N7570

Your answers should be specific to the question asked

Draw neat labelled diagrams wherever necessary

I. LONG ESSAY

2×20 = 40 Marks

1. Define food preservation. Discuss various chemical preservatives and their application in preventing food spoilage. (4 + 16 = 20 marks)
2. Explain the significance of biological-based preservation systems. Discuss the role of probiotics in enhancing food safety. (6 + 14 = 20 marks)

II. SHORT ESSAY

6×10=60 Marks

3. Explain the history of food microbiology, spoilage, and major food legislation related to food safety.
4. Describe the spoilage of cereals and cereal products due to microbial activities.
5. Explain factors affecting microbial growth in foods, including examples of extrinsic and intrinsic factors.
6. Enumerate rapid detection techniques in food microbiology, including PCR and ELISA.
7. Define mycotoxins and describe their impact on human health.
8. Discuss the importance of HACCP in controlling microbiological hazards in food processing industries.