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, April- 2025 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

LONG ESSAY **2x20= 40 Marks**

1. Define Favism. Explain the cyanogenic glycosides and vasoactive amines linkage to foodborne toxicants. 2+9+9
2. Define toxicants and give examples. Explain the effects of naturally occurring toxicants and containments for living organisms and give examples. 4+12+4

ESSAY **6x10=60 Marks**

3. Describe the current applications of food irradiation in the food industry.
4. Describe the biological determinants of toxicants
5. Describe the relevance of replication, transcription and translation to teratogenesis
6. Explain the Toxicity, Dose, and Response
7. Discuss the role phase-I reactions in biotransformation
8. Explain the nature of Transmissible Spongiform Encephalopathies (TSEs) and the role of prions in their development.

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Fourth Year, Semester-VII, March/April-2025 Examination

Time: 3 Hrs. **Max Marks: 100**

FUNCTIONAL FOODS AND NUTRACEUTICALS

QP Code: N7550

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

LONG ESSAY **2×20=40 Marks**

1. Define bioavailability. List two factors affecting bioavailability. Explain the methods used to measure bioavailability. Discuss its importance in functional food formulation. (2.5 + 2.5 + 8 + 7 = 20 marks)
2. Define isoprenoid derivatives. Mention two examples. Explain their chemical structure and functional role. Discuss their impact on human health. (2.5 + 2.5 + 8 + 7 = 20 marks)

ESSAY **6×10=60 Marks**

3. Describe the mechanism of action of omega-3 fatty acids in disease prevention and cardiovascular health.
4. Explain the role of conjugated linolenic acid in metabolic health and inflammation reduction.
5. Discuss the impact of functional beverages in sports nutrition and energy metabolism.
6. Explain the health benefits of phenolic substances in functional foods and their antioxidant potential.
7. Describe the concept of instant food formulas and their applications in medical nutrition.
8. Discuss the importance of functional foods in managing vitamin A deficiency and related disorders.

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Fourth year, Semester - VII, April 2025 Examination

NUTRITIONAL GENOMICS

Time- 3 Hrs **[Max Marks: 100]**

QP Code: N7560

Your answer should be specific to the question asked

Draw neat labelled diagrams wherever necessary

I. LONG ESSAY **2 x20 = 40 Marks**

1. Define Lipid and name different types of lipids and explain the functions of lipids and its influence on gene expression.
2. Differentiate metabolomics and genomics and add a note on importance of metabolites in disease prevention

II. SHORT ESSAY **6 x 10 = 60 Marks**

3. Explain epigenetic regulation in lung cancer
4. Define genetic code and explain its characteristics
5. Explain how nutrients effect early development and epigenetics
6. What are genetic material and its importance in human health?
7. Define genetic buffering and explain the genetic and molecular Buffering of Phenotypes
8. Define epigenetics and explain the mechanisms of epigenetics

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Fourth Year Semester-VII, March/April-2025 Examination

Time: 3 Hrs **Max Marks: 100**

FOOD MICROBIOLOGY

QP Code: N7570

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

Long Essay **2×20 = 40 Marks**

1. Define the sources of microorganisms in foods. Explain the morphology, cultural characteristics, and biochemical activities of spoilage microorganisms in food. *(4 + 8 + 8 = 20 marks)*
2. Define food preservation. Explain physical methods of food preservation such as drying, freeze-drying, cold storage, heat treatments, and irradiation. *(4 + 16 = 20 marks)*

Short Essay **6×10=60 Marks**

3. Describe the types of food spoilage and explain microbial spoilage in fruits and vegetables.
4. Discuss the principle and significance of conventional methods of microbial detection in food.
5. Define antagonism and synergism in microorganisms. Explain with suitable examples.
6. Enumerate high-pressure processing and its application in food preservation.
7. Explain the microbial quality indicators in food and their significance in food safety.
8. Describe the role of microorganisms in fermented foods and genetically modified foods.