



**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 2024 Examination**

**Time- 2 Hrs**

**[Max Marks: 60]**

**FOOD TOXICOLOGY**

**QP Code:N7200**

*Your answer should be specific to the question asked*

*Draw neat labeled diagrams wherever necessary*

**LONG ESSAY**

**2x10= 20 Marks**

1. Explain entry and absorption of foreign compounds
2. Define toxicants. Explain the quantitative analysis of toxicants in foods

**SHORT ESSAY**

**5x5=25 Marks**

3. Explain the exertion of toxicants from living organisms
4. Discuss examples of known teratogens, mutagens and carcinogens
5. Explain the formation of food contaminants
6. Explain the effective dose, margin of safety and the relationship of effective versus toxic dose
7. Discuss the general principles behind food processing and preparation

**SHORT ANSWER**

**5x3=15 Marks**

8. What are residues and contaminants?
9. List the branches of toxicology
10. Mention the relationship between toxicology and pharmacology
11. What is chronic exposure
12. Expand LD, ED and LC

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**FUNCTIONAL FOODS AND NUTRACEUTICALS**

**QP Code: N7220**

*Your answers should be specific to the question asked*

*Draw neat labelled diagrams wherever necessary*

**LONG ESSAY**

**2×10=20 Marks**

1. Explain how nutraceuticals help in disease management.
2. Write about the natural pigments and state its health benefits.

**SHORT ESSAY**

**5×5=25 Marks**

3. Explain the health benefits of PUFA
4. Explain briefly the functions of carotenoids and give its biological functions
5. Explain health benefits of edible algae as nutraceutical rich supplement
6. Highlight a brief overview about functional food product in Indian market
7. Write a short note on nutraceuticals from cereal product.

**SHORT ANSWER**

**5×3=15 Marks**

8. Which beneficial compounds are present in turmeric
9. What are the different market forms of nutraceuticals?
10. List the health benefits of Flavonoids
11. List the medical benefits of probiotics
12. Write a note on Garlic and Fish oil as healthy food.

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**[Max Marks: 50]**

**NUTRITIONAL GENOMICS**

**QP Code: N7230**

*Your answer should be specific to the question asked*

*Draw neat labelled diagrams wherever necessary*

**LONG ESSAY**

**2 x 6 = 12 Marks**

1. Define polyphenols and explain mechanism of action of polyphenols in cancer prevention
2. Define gene environment interaction. Explain the role of gene –gene interaction in obesity and diabetes

**SHORT ESSAY**

**6 x 4 = 24 Marks**

3. Define Lipid and list the types of lipids and their functions
4. Differences between structural and functional genomics
5. Explain factors influencing gene environment interactions
6. Explain the role of micRNA's in diet induced hepato carcinogenesis
7. Draw structures of purines and pyrimidines
8. Note on Histone modifications

**SHORT ANSWERS**

**7 x 2 = 14 Marks**

9. Define Nuclear receptor
10. What are retroviruses
11. Note on Epistasis and Epigenetics
12. Define Genetic variability and Microbiome
13. List study designs to analyse gene environment interactions
14. List few neurodevelopmental disorders
15. Note on LDL subclasses

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**Max Marks: 50**

**FOOD MICROBIOLOGY**

**QP Code: N 7240**

*Your answers should be specific to the question asked*

*Draw neat labelled diagrams wherever necessary*

**LONG ESSAY**

**2×6=12 Marks**

1. Discuss the effect of ionising radiations on nutrients in food
2. Briefly explain the role of fermentative non spore forming bacteria in spoilage of milk

**SHORT ESSAY**

**6×4=24 Marks**

3. Discuss about the cellular stressors inhibiting the microbial growth.
4. Give a detailed account of toxins of *Aspergillus* species
5. Explain the rapid methods used for the detection of specific organisms
6. Broadly classify the organisms important in food fermentations
7. Discuss the general types of microbial spoilage in fruits and vegetables
8. Discuss the four categories of human botulism

**SHORT ANSWER**

**7×2=14 Marks**

1. Define food poisoning
- 10.MPN
- 11.Indicator organisms
- 12.Maillard reaction
- 13.List a few anti microbial additives
- 14.Differentiate between oxidative and fermentative yeasts
- 15.Radappertization

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