MOUNT CARMEL
(Deemed to be UNIVERSITY)
Estd. 1948 | A CSST Institution | Bengaluru | Karnataka | India

PhD ENTRANCE EXAM SYLLABUS

FOOD SCIENCE AND NUTRITION

PAPER CODE: PHDFSN2027

1. Human Physiology

- Digestive system
- Circulatory System
- Respiratory System
- Skeletal System
- Nervous System
- Excretory System
- Reproductive System

2. Nutritional Biochemistry

- Metabolism of carbohydrates
- Protein metabolism
- Lipid metabolism
- Vitamin & minerals metabolism
- Nucleotide metabolism
- Enzymology

3. Food Microbiology

- Historical developments in general and food microbiology.
- Sources of microorganisms in foods. Microbial growth and its implications in food. Immunological methods: fluorescent antibody, radioimmunoassay, ELISA, and PCR.
- Water activity: role in food preservation, intermediate moisture foods (IMF).

4. Advanced Nutrition

- Body composition and energy requirements
- Carbohydrates and dietary fibre-Function, classification, sources, deficiency and toxicity
- Proteins - Function, classification, sources, deficiency and toxicity
- Fat & Lipids - Function, classification, sources, deficiency and toxicity
- Vitamins - Function, classification, sources, deficiency and toxicity
- Minerals - Function, classification, sources, deficiency and toxicity
- Water - Function, classification, sources, deficiency and toxicity

5. Clinical Nutrition & Dietetics

- Introduction to clinical Nutrition
- Therapeutic modification of the normal diet
- Nutrition in obesity, underweight and malnutrition
- Nutrition in gastrointestinal disorders
- Nutrition in cardiovascular diseases
- Nutrition in kidney and liver disorders
- Nutrition in Cancer, Burns, Critical Care
- Nutrition in Special Conditions – inborn errors of metabolism, developmental disabilities
- Nutrition Counselling

6. Food Science

- Food science & Properties of food – physical and chemical properties
- Cereals and Millets
- Legumes and Pulses and sugars
- Milk & milk products and fats
- Egg, fish, poultry and meat
- Vegetables and fruits
- Quality evaluation of foods- objectives and subjective.
- Effects of cooking and processing techniques on nutritional components and other physical parameters, food preservation and application.
- Food pigments and additives.
- Food standards, microbiological safety of food, HACCP, food packaging.
- New product development - nano technology

7. Community Nutrition

- Introduction to community nutrition
- Epidemiology of nutritional disorders in community
- Assessment of nutritional status
- Programmes and policies for improvement of nutritional status
- National and international agencies in combating malnutrition
- Challenges to community nutritional status

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