

**FURTHER DETAILS REGARDING MAIN TOPICS OF  
PROGRAMME NO. 08/2015 (Item No. 9)**

**LECTURER IN HOME SCIENCE (FOOD &  
NUTRITION)**

**COLLEGIATE EDUCATION**

**(CATEGORY NO. 598/2012)**

**PART I:**

**Module 1: HUMAN PHYSIOLOGY**

Study of Cardiovascular system, Digestive System ,Excretory System, Respiratory System, Nervous System, Endocrine System, Immune System and Lymphatic System

**Module 2: ADVANCED NUTRITION**

Study of human Energy metabolism

Functions, classification, sources digestion, absorption ,transport, excretion and disorders of Carbohydrates, Proteins ,Lipids , Macrominerals (Calcium, Phosphorous, Magnesium, Sodium, Potassium, Chloride and Magnesium), Microminerals ( Iron, Zinc, Copper, Selenium, Chromium, Manganese, Iodine and Fluorine), Fat Soluble Vitamins (Vitamin A, D, E and K), Water Soluble Vitamins ( Thiamine, Riboflavin, Niacin, Pyridoxine, Folate, Cyanocobalamine and Ascorbic Acid) and Water

**Module 3: NUTRITIONAL BIOCHEMISTRY**

Structure, Classification and Metabolism carbohydrates, protein, **Lipids**, major vitamins and minerals with coenzyme functions and mode of action ,**Biological Oxidation** , **Nucleic Acids** classification of enzymes, Mechanism of action, Factors affecting enzyme activity

**Module 4: NUTRITION THROUGH LIFE CYCLE**

Methods for studying human nutritional requirements, Principles of computation of RDA for Indian by ICMR - Energy, Protein, Fats, Mineral and Vitamin requirements. **Nutrition in Pregnancy, Lactation, Infancy, Childhood, Adolescence and old age**

## **Module 5: CLINICAL NUTRITION AND DIETETICS**

**Diet therapy and Nutritional Care in Diseases.** The Nutritional Care process, Diet modifications-types of hospital diets . **Dietary management in the diseases of the Gastro Intestinal system, Circulatory System Liver and Pancreas . Diet in Diabetes Mellitus, Renal Diseases and Cancer**

## **Module 6: RESEARCH METHODS AND STATISTICS**

**Part 1 Research methods; Introduction to Research, Identification of Research Problem, Sampling Research methods and tools**

**Part 2 STATISTICS;**

**Descriptive Statistics** Measures of Central Tendency ñ Mean, Median, Mode; Partition Values Quartiles, Deciles and Percentiles, Measures of Dispersion ñ Range, Quartile deviation, Standard deviation. Absolute and Relative measures of dispersion, Coefficient of variation.

**Correlation and Regression:**

**Concept of Probability and Random Variable.**

**Sampling distributions**

## **Module 7: FOOD SCIENCE AND TECHNOLOGY**

Chemistry and Functional role in foods- Carbohydrates, **lipids, Proteins**

**Enzymes and Pigments**, Applications of Enzymes in Food Industry, Natural Colours Used in Foods, Novel Sources of Natural Colourants, Stability of Natural Colourants in Foods.

**Colloids, Colloid Systems and Applications,**

**Primary processing of cereals, pulses and oil seeds**, Fruits and Vegetables, Milk and milk products, Meat, Poultry, Fish, Egg and Spices

**Functional Foods** Definition, classification, Health effects, mechanism of action

## **Module 8: FOOD MICROBIOLOGY AND QUALITY CONTROL**

**Scope and importance of food microbiology ,Micro-organisms in food, Factors affecting the survival and growth of micro-organisms in food Microbiological Spoilage of different groups of foods**(Cereals, vegetables and fruits, meat, eggs, poultry, fish, milk and milk products, canned Foods). **Food borne infections and diseases**, Significance to public health, food hazards and risk factors, bacterial and viral food **Quality Control/Quality Assurance, Toxicants and Contaminants**

## **Module 9: PUBLIC HEALTH NUTRITION**

Food and Nutrition Situation in India, Assessment of nutritional status in community setting, Principles of epidemiology ,Epidemiology of Nutritional disorders (Prevalence, Aetiology, Consequences and treatment of PEM ,Vitamin A deficiency disorders(VADD) Iron Deficiency Anaemia, Iodine Deficiency Disorders, Zinc Deficiency

Flourosis. Organisations and Programmes in the field of nutrition monitoring and Interventions(Brief outline of WHO, FAO, UNICEF,CARE, NFHS, NNMB,ICDS, ICMR,ICAR). Nutrition Education.Food Fortification. Nutrition related non communicable chronic disorders

## **Module 10: BIOPHYSICAL TECHNIQUES**

Principles and applications of chromatography **Chromatography**, colorimetry, Fluorimetry, Spectrophotometry- UV, Visible,AAS and AES, Infrared spectrometry, Flame photometry. Electron microscopy-Principle,Instrumentation and Applications of **Electrophoresis, Radioactive Isotopes and Bioassays. Basics of Instrumentation Physico-chemical principles and methodology**

## **PART II: RESEARCH METHODOLOGY/TEACHING APTITUDE**

### **I. TEACHING APTITUDE**

- Teaching: Nature, objectives, characteristics and basic requirements;
- Learner's characteristics;
- Factors affecting teaching;
- Methods of teaching;
- Teaching aids;
- Evaluation systems.

### **II. RESEARCH APTITUDE**

- Research: Meaning, Characteristics and types;
- Steps of research;
- Methods of research;
- Research Ethics;
- Paper, article, workshop, seminar, conference and symposium;
- **Thesis writing: its characteristics and format.**

## **PART IIIA: SALIENT FEATURES OF INDIAN CONSTITUTION**

Salient features of the Constitution - Preamble- Its significance and its place in the interpretation of the Constitution.

Fundamental Rights - Directive Principles of State Policy - Relation between Fundamental Rights and Directive Principles - Fundamental Duties.

Executive - Legislature - Judiciary - Both at Union and State Level. - Other Constitutional Authorities.

Centre-State Relations - Legislative - Administrative and Financial.

Services under the Union and the States.

Emergency Provisions.

Amendment Provisions of the Constitution.

## **PART III B: SOCIAL WELFARE LEGISLATIONS AND PROGRAMMES**

Social Service Legislations like Right to Information Act, Prevention of atrocities against Women & Children, Food Security Act, Environmental Acts etc. and Social Welfare Programmes like Employment Guarantee Programme, Organ and Blood Donation etc.

## **PART IV A: RENAISSANCE IN KERALA**

### **TOWARDS A NEW SOCIETY**

Introduction to English education - various missionary organisations and their functioning- founding of educational institutions, factories, printing press etc.

### **EFFORTS TO REFORM THE SOCIETY**

#### **(A) Socio-Religious reform Movements**

SNDP Yogam, Nair Service Society, Yogakshema Sabha, Sadhu Jana Paripalana Sangham, Vaala Samudaya Parishkarani Sabha, Samathwa Samajam, Islam Dharma Paripalana Sangham, Prathyaksha Raksha Daiva Sabha, Sahodara Prasthanam etc.

#### **(B) Struggles and Social Revolts**

Upper cloth revolts. Channar agitation, Vaikom Sathyagraha, Guruvayoor Sathyagraha, Paliyam Sathyagraha. Kuttamkulam Sathyagraha, Temple Entry Proclamation, Temple Entry Act .Malyalee Memorial, Ezhava Memorial etc.

Malabar riots, Civil Disobedience Movement, Abstention movement etc.

### **ROLE OF PRESS IN RENAISSANCE**

Malayalee, Swadeshabhimani, Vivekodayam, Mithavadi, Swaraj, Malayala Manorama, Bhashaposhini, Mathnubhoomi, Kerala Kaumudi, Samadarsi, Kesari, Al-Ameen, Prabhatham, Yukthivadi, etc

### **AWAKENING THROUGH LITERATURE**

Novel, Drama, Poetry, *Purogamana Sahithya Prasthanam*, *Nataka Prashtanam*, Library movement etc

## **WOMEN AND SOCIAL CHANGE**

Parvathi Nenmenimangalam, Arya Pallam, A V Kuttimalu Amma, Lalitha Prabhu.Akkamma Cheriyan, Anna Chandi, Lalithambika Antharjanam and others

## **LEADERS OF RENAISSANCE**

Thycaud Ayya Vaikundar, Sree Narayana Guru, Ayyan Kali.Chattampi Swamikal, Brahmananda Sivayogi, Vagbhadananda, Poikayil Yohannan(Kumara Guru) Dr Palpu, Palakkunnath Abraham Malpan, Mampuram Thangal, Sahodaran Ayyappan, Pandit K P Karuppan, Pampadi John Joseph, Mannathu Padmanabhan, V T Bhattathirippad, Vakkom Abdul Khadar Maulavi, Makthi Thangal, Blessed Elias Kuriakose Chaavra, Barrister G P Pillai, TK Madhavan, Moorkoth Kumaran, C. Krishnan, K P Kesava Menon, Dr.Ayyathan Gopalan, C V Kunjuraman, Kuroor Neelakantan Namboothiripad, Velukkutty Arayan, K P Vellon, P K Chathan Master, K Kelappan, P. Krishna Pillai, A K Gopalan, T R Krishnaswami Iyer, C Kesavan. Swami Ananda Theerthan , M C Joseph, Kuttippuzha Krishnapillai and others

## **LITERARY FIGURES**

Kodungallur Kunhikkuttan Thampuran, KeralaVarma Valiyakoyi Thampuran, Kandathil Varghesc Mappila. Kumaran Asan, Vallathol Narayana Menon, Ulloor S Parameswara Iyer, G Sankara Kurup, Changampuzha Krishna Pillai, Chandu Menon, Vaikom Muhammad Basheer. Kesav Dev, Thakazhi Sivasankara Pillai, Ponkunnam Varky, S K Pottakkad and others

## **PART IV B: GENERAL KNOWLEDGE AND CURRENT AFFAIRS**

General Knowledge and Current Affairs

***NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.***