PART I – FOOD TECHNOLOGY


PART II - DAIRY TECHNOLOGY

PART III - VETERINARY SCIENCES


PART IV - FOOD SAFETY AND ALLIED LAWS


PART V - NUTRITIONAL BIOCHEMISTRY AND FOOD ANALYSIS

Chemical composition of food: Carbohydrates, lipids, proteins, fiber, vitamins, and minerals – characteristics, sources, physiological and biochemical functions, daily requirement, digestion and absorption. Biological value of proteins (BV), Protein efficiency ratio (PER), Digestability coefficient, Net protein Utilization, Net Protein Ratio(NPR), Chemical Score, Free Radicals and Antioxidants. Energy value of foods, Respiratory Quotient (RQ), Determination of Basal Metabolic Rate (BMR), Determination of energy metabolism during work, Energy expenditure for various types of activities, Recommended Daily Allowance (RDA), Specific Dynamic Action (SDA) of foods, Balanced diet formulation. Analytical techniques used in detection of adulteration of food: Principle, procedure and detectors of chromatographic techniques (Column, paper, TLC, HPLC and GC), Spectroscopic techniques (IR, UV , MS and AAS). Food Analysis – moisture content, ash, fat, carbohydrate, crude fibre, crude protein, sodium, potassium, calcium, and phosphates. Food adulteration: common adulteration, contamination and pesticide analysis. Oils and Fats - Iodine value and saponification value.

PART VI - MICROBIOLOGICAL, BIOTECHNOLOGICAL AND MEDICAL ASPECTS

Microscopy, staining and culture techniques, sterilization techniques, culture media, factors influencing microbial growth, growth curve, thermal death time and thermal death points, D-value, Z- value. Sources of microorganisms in food, perishable, semi perishable and non-
perishable foods, intrinsic and extrinsic parameters influencing microbial content of food, Food spoilage-types, causes and indications. Control of spoilage-pre-harvesting and post harvesting food processing. **Food Borne Diseases:** Definition, Classification (Food borne intoxications & Food borne infections), neuroathrysm, aflatoxins, Ergotism, Epidemic dropsy, Typhoid fever, Salmonellosis, Staphylococcal intoxication, Botulism, Bacillus cereus food poisoning, *E.coli* diarrhea, Cholera, Shigellosis, Brucellosis, **Food poisoning:** Types of food poisoning, method of investigation of food poisoning, prevention and control-food sanitation, refrigeration, surveillance. **Food handlers:** medical examination of food handlers, infections transmitted by food handlers, education of food handlers. **Adulteration of foods:** Health hazards. **Sanitation of eating places:** minimum standards, storage of uncooked foodstuffs, waste disposal, water supply and washing facilities. Fermented foods- types, production, organisms involved, advantages and disadvantages, spoilage of fermented foods. Microbiological analysis of food and water- qualitative and quantitative, indicator organisms, coliforms, detection of pathogens, molecular techniques for detection of microbes. Microbiological standards of food and water. Water purification for domestic and municipal purposes. Sewage treatment. Application of enzymes in food industry, production of food flavor and colour. Enzyme immobilization and applications. Use of amylase, invertase, protease, pectinase and cellulase in food industries. Bioreactors. Single-Cell Proteins. Molecular detection of food contamination. Genetically modified food and their labelling.

**PART VII - AGRICULTURAL SCIENCES**

**Post harvest handling:** Physiology of maturity, ripening and senescence in cereals, pulses, fruits and vegetables. Maturity indices and harvesting of vegetables. Post harvest losses, phases of loss and measures to reduce the losses. Fruits and vegetables- cleaning and grading, methods of grading, equipment for grading of fruits and vegetables. Storage, grain storage, types of storage structures- traditional, improved and modern storage structures. Size reduction-Principles and equipment for size reduction. Edible mushrooms. **Stored product pests and their management** – preventive and curative methods. **Rodent management:** principles and methods of control; Rodenticides - acute poisons, chronic poisons, fumigants. Fumigation, baits, baiting and rat proofing.

**PART VIII - INDIAN NATIONAL MOVEMENT & RENAISSANCE IN KERALA**

1) **INDIAN NATIONAL MOVEMENT - PERIOD FROM 1857 TO 1947.**

2) **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, Kuttambalam 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, AI-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 Anatharjanam and others

Leaders Of Renaissance

Literary Figures
Menon, Vaikom Muhammad Basheer. Kesav Dev, Thakazhi Sivasankara Pillai, Ponkunnam Varky, S K Pottakkad and others

PART IX - MENTAL ABILITY AND TEST OF REASONING

Calculation & Logic - Coding & Decoding – Classification – Synonym – Antonym -Letter & Number Series - Odd Man Out – Analogy - Common Sense Test - Alphabetical Arrangement of Words - Date and Calendar - Sense of Direction - Etc.

PART X- GENERAL ENGLISH


Vocabulary – Gender - Singular and Plural – Synonyms – Antonyms - One word Substitutes - Problem concerning words - Idioms and their meanings – Etc.

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.