

ANNEXURE-III**SCHEME AND SYLLABUS FOR RECRUITMENT TO THE POST OF FOOD SAFETY OFFICER IN THE INSTITUTE OF PREVENTIVE MEDICINE PUBLIC HEALTH LABORATORIES & FOOD (HEALTH) ADMINISTRATION****Scheme of Examination**

Written Examination (Objective Type)	No. of Questions	Duration (Minutes)	Maximum Marks
Paper-I: General Studies and General Abilities	150	150	150
Paper-II: Concerned Subject (Degree Level) Common for all	150	150	150
Total			300

Name of the Papers	Language of Examination
Paper-I: General Studies and General Abilities	Bilingual i.e., English and Telugu
Paper-II: Concerned Subject (Degree Level) : Common for all	English

SYLLABUS**Paper-I: General Studies and General Abilities**

1. Current Affairs – Regional, National and International
2. International Relations and Events.
3. General Science; India's achievements in Science and Technology
4. Environmental issues and Disaster Management
5. Economy of India and Telangana
6. Geography of India with a focus on Telangana
7. Indian Constitution and Polity with a focus on local self Government
8. Society, Culture, Heritage, Arts and Literature of Telangana
9. Policies of Telangana State
10. History of Modern India with a focus on Indian National Movement
11. History of Telangana with special emphasis on Movement for Telangana Statehood
12. Logical Reasoning, Analytical Ability and Data Interpretation
13. Basic English.

Paper-2: Concerned Subject (Common for All)

1. Food Chemistry

Carbohydrates -Structure and functional properties of mono, di & oligo-polysaccharides including starch, cellulose, pectic substances and dietary fiber; Proteins - Classification and structure of proteins in food. Lipids-Classification and structure of lipids, Rancidity of fats, Polymerization and polymorphism; Pigments-Carotenoids, chlorophylls, anthocyanins, tannins and myoglobin; Food flavours-Terpenes, esters, ketones and quinones; Enzymes-Enzymatic and non-enzymatic browning in different foods.

2. Food Microbiology, Hygiene & Sanitation

Characteristics of microorganisms-Morphology, structure and detection of bacteria, yeast and mold in food, Spores and vegetative cells; Microbial growth in food- Intrinsic and extrinsic factors, Growth and death kinetics, serial dilution method for quantification; Food spoilage- Contributing factors, Spoilage bacteria, Microbial spoilage of milk and milk products, meat and meat products; Food borne disease-Toxins produced by *Staphylococcus*, *Clostridium* and *Aspergillus*; Bacterial pathogens- *Salmonella*, *Bacillus*, *Listeria*, *Pseudomonas*, *Candida*, *Escherichia coli*, *Shigella*, *Campylobacter*; Food Hazards of natural origin - sea food toxins, biogenic amines, alkaloids, phenolic compounds, protease inhibitors and phytates.

Types of hazards, biological, chemical, physical hazards, importance of safe foods.

Principles and methods of food preservation.

Hygiene and sanitation in food sector - pest control measures, Garbage and Sewage disposal, Water - Sources, purification, Hazards Analysis & Critical Control Point (HACCP), Good Manufacturing Practices (GMP), Good Hygienic Practices (GHP), Good laboratory Practices (GLP).

3. Food Processing Technology

Food processing- structure, composition, nutritional significance and types of processing methods for various categories of foods: Cereals (Rice-milling, parboiling, Barley- Pearling, malting, brewing, Corn- wet and dry milling, Wheat-milling, pulses (milling, germination, cooking, roasting, frying, canning and fermentation), and oil seeds (extraction and refining), Fruits & vegetables (canning, drying and dehydration, concentration, freezing, IQF, thawing and fermentation); plantation crops (primary and secondary processing of Tea, Coffee and Cocoa), Spices (Oleoresin and essential oil extraction), Meat, fish and poultry (ante mortem inspection, slaughtering and dressing, post mortem examination, canning, curing, smoking, freezing, dehydration and fermentation), eggs (quality inspection and dehydration) milk (receiving, separation, clarification, pasteurization, standardization, homogenization, sterilization, UHT and fermentation).

Unit operations of food processing – grading, sorting, peeling and size reduction.

Product development - Consumer trends and their impact on new product development; stages- to conceive ideas, evaluation of ideas, developing ideas into products, test marketing and commercialization; criteria for selection of raw materials, sensory evaluation, objective evaluation, standardization.

Types & functions of packaging materials including smart packaging and biodegradable materials used in foods. Packaging material as a threat, impact on health and controlling measures.

Surveys – types, sampling procedures for conducting surveys and for quality control.

4. Food Laws and Organizations

Laws and Regulations - Brief review of regulatory status in India before the advent of FSSAI: FPO, MMPO, MFPO, Prevention of Food Adulteration Act, Paradigm shift from PFA to FSSAI; Overview of Food Safety Standards Act 2006, Food Safety Standards Rules & Regulations, 2011 (Licensing and registration of food businesses, Food product standards & Additives, Packaging & labelling, Contaminants, toxins and residues, Laboratory and sample analysis, Prohibition and restriction on sales), Organizational hierarchy, Powers and duties of Food business Operator, Food Safety Officer, Designated Officer, Food Analyst; Food recall and Traceability, Other Acts: Essential commodities Act, Legal Metrology Act, AGMARK Codex Alimentarius - development and issue of standards, Committees under Codex, role in maintaining harmony in food standards.

National Organizations - Bureau of Indian Standards, ICMR, ICAR, NABL, Council for social welfare, Ministry of Health & Family Welfare - delivery Health Services in India.

Export and Quality Control through Export Inspection Council (EIC), APEDA and MPEDA. International Organizations FAO (Food & Agriculture Organization), WHO (World Health Organization), ISO, WTO, APLAC, ILAC.

5. Public & Occupational health and Nutrition

Public Health: Definition of Public Health and Associated Terms, Current Concerns in Public Health : Global and Local, Core functions and scope of public health, History of public health and evolution of Public Health, Concept of health and disease, Natural history of disease, Levels of prevention, Concept of health and disease, Natural history of disease, Determinants of health, Infectious Disease and Germ Theory, Introduction to public health ethics, Globalization and Health, Governance in Health, International Health Regulations, Indian Health Systems.

Occupational Health - health of workers in industries safety measures, occupational diseases. Nutrition - Assessment of nutritional status, Balanced diet, food sources of nutrients, essential vitamins, amino acids and fatty acids, their deficiency diseases and toxicity, PER, Recommended dietary allowances for various nutrients, Antinutrients, clinical and diet surveys.

Programmes on Nutrition in India (mid-day meals at schools, anganwadi systems, ICDS, NIDDCP, NNAPP, WIFS, National Food Security Mission, SABLA, FSSAI initiatives on food fortification, FFRC, FFWP, NPPNB due to VAD, NGCP).