

# Assam Food Safety Officer Syllabus|| Check MHRB Assam FSO Exam Pattern

<b>WRITTEN EXAMINATION (OBJECTIVE TYPE)</b>				
<b>PAPER-1</b>	General Studies & Mental Ability	150 Marks	150 Questions	150 Minutes
<b>PAPER-2</b>	Food Technology	150 Marks	150 Questions	150 Minutes
Total :		300 Marks		
<b>Note: As per G.O.Ms. No.235 Finance (HR-1, Plg &amp; Policy) Dept, Dt: 06/12/2016, for each wrong answer will be penalized with 1/3<sup>rd</sup> of the marks prescribed for the question.</b>				

## **PAPER-I**

### **GENERAL STUDIES AND MENTAL ABILITY**

1. Events of national and international importance.
2. Current affairs- international, national and regional.
3. General Science and its applications to the day to day life Contemporary developments in Science & Technology and information Technology.
4. Social- economic and political history of modern India with emphasis on Andhra Pradesh.
5. Indian polity and governance: constitutional issues, public policy, reforms and e-governance initiatives with specific reference to Andhra Pradesh.
6. Economic development in India since independence with emphasis on Andhra Pradesh.
7. Physical geography of Indian sub-continent and Andhra Pradesh.
8. Disaster management: vulnerability profile, prevention and mitigation strategies, Application of Remote Sensing and GIS in the assessment of Disaster.
9. Sustainable Development and Environmental Protection
10. Logical reasoning, analytical ability and data interpretation.
11. Data Analysis:
  - a) Tabulation of data
  - b) Visual representation of data
  - c) Basic data analysis (Summary Statistics such as mean, median, mode, variance and coefficient of variation) and Interpretation
12. Bifurcation of Andhra Pradesh and its Administrative, Economic, Social, Cultural, Political, and Legal implications/problems.

### **PAPER-2: Food Technology**

#### **1. Food Chemistry**

Carbohydrates -Structure and functional properties of mono, di&oligo-polysaccharides including starch, cellulose, pectic substances and dietary fibre; 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**

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, 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 factors affecting safety, importance of safe foods.**

**General methods of food preservation and food processing preservation of food spoilage**

**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- Pearl, 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 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), milk (receiving, separation, clarification, pasteurization, standardization, homogenization, sterilization, UHT).

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 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. Hygiene & Sanitation**

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).

## 6. 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)

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