

**RAJASTHAN PUBLIC SERVICE COMMISSION**  
**SYLLABUS FOR SCREENING TEST FOR THE POST OF**  
**FOOD SAFETY OFFICER**  
**MEDICAL AND HEALTH SERVICES DEPARTMENT**

**UNIT-I**

Chemical bonds and forces, concept of pH and buffer, thermo chemistry, chemical equilibrium, chemical kinetics. Aliphatic and Aromatic hydrocarbons- concept of aromaticity, methods of preparation and chemical properties of alcohols, phenols, aldehydes, ketones, carboxylic acids, nitro compounds and amines. Different methods of purification, qualitative and quantitative analysis. Solutions- concentration terms, liquid- properties, surface tension, viscosity and its applications. Surface chemistry-adsorption, homogeneous and heterogeneous catalysis, colloids and suspension.

**UNIT-II**

Types of micro organism associated with food, their morphology and structure, factors affecting their growth, microbiological standards, sources of micro organism in food, some important food spoilage micro organisms, fermentation- definition and types, micro organisms used in food fermentation, dairy fermentation, fermented foods- types, methods of manufacture for vinegar, sauerkraut, soya sauce, beer, wine and traditional Indian foods.

**UNIT-III**

Bio molecules - carbohydrates, proteins, lipids and nucleic acids, their classification, structure, bio synthesis, metabolism and calorific value. Enzymes- classification, kinetics, factors controlling enzyme activities, enzymes used during food processing, modification of food by endogenous enzymes. Vitamins and their types. Minerals- important minerals and their functions in human body. Plant alkaloids and their uses. Animal and plant toxins. Toxic substances and their metabolism- pesticides, metals, food additives etc.

**UNIT-IV**

Classification- five kingdom system upto phylum, plants and animal products used as food by human. Culture of animals used as food. Eukaryotic and Prokaryotic cells. Types of cells, animal tissues and organs. Human physiology- Nutrition and Digestion. Respiration- respiratory pigment, transport and gaseous exchange. Excretion- structure of kidney and urine formation. Circulatory system- Heart, Blood vascular system, blood and its components. Nervous system- conduction of impulses.

muscular system- types of muscles and muscle contraction. Reproductive system. Endocrine system- hormones and their role.

Immune system- types of immunity, antigen-antibody reaction. Diseases- deficiency diseases, communicable diseases and diseases caused by animals (protozoans, helminthes, arthropodans).

### **UNIT –V**

Genetically modified plants and animals, plant and animal tissue culture and its application, importance of GM-crops and their products, environmental bio technology- pollutants, Biomagnification and microbial bioremediation .

Statistical analysis- mean, median, mode, standard deviation, regression and co-relation, T-test, variance, chi-square test.

### **UNIT -VI**

Salient features of agriculture with special reference to Rajasthan. Soil Fertility and Management of Problematic Soils in Rajasthan. Introduction to Dry land Farming and Agro-forestry. Introductory knowledge about Production Techniques of important field crops (Wheat, Mustard, Groundnut, Pulses, *Bajra*, Maize). Horticultural crops (Citrus, Mango, Guava, Ber, Onion, Tomato, Cucurbits, Chilli, Rose etc.) Spices and Medicinal crops (Cumin, Fenugreek, Fennel, Coriander, Isabgol, *Aloevera*, etc.) Important diseases and Pests of major Crops and their Management. Importance of agriculture marketing. General awareness about Seed science and Crop Physiology.

### **UNIT-VII**

Importance of Livestock in Economy of Rajasthan. Fundamentals of Livestock and Poultry Production. Artificial insemination and Pregnant animal management. Laboratory diagnostics, Important diseases of livestock and their management. Present status of Milk and Milk products. Milk production and quality of milk. Milk processing and packaging. Dairy equipments and utilities. Introduction to livestock products.

### **UNIT-VIII**

Present status of Food Technology in India and Rajasthan. General methods of food preservation and food processing. Importance of Post harvest technology of fruits and vegetables. Technology for processed products like Squash, Jelly, Sauce, Pickles etc. Post harvest Physiology and handling of fruits and vegetables. Types and functions of Packaging materials used in fresh and processed food. Food laws - brief review of regulatory status in India (FPO, Prevention of Food adulteration Act, Food Safety and Standard Act, Testing Food for its Safety, AGMARK). Hygiene and Sanitation (HACCP, Good Manufacturing Practices, Good Laboratory Practices etc.)

### **UNIT-IX**

Pre & Early history of Rajasthan. Age of Rajput: Major dynasties of Rajasthan and the achievements of prominent rulers. Emergence of Modern Rajasthan: factors of Socio-Political awakening of 19<sup>th</sup> century; Peasants and tribal movements of 20<sup>th</sup> century; Political struggle of 20<sup>th</sup> century and the integration of Rajasthan.

## **UNIT-X**

Visual Art of Rajasthan - Architecture of forts and temples of Rajasthan; Sculpture traditions of Rajasthan and various schools of painting of Rajasthan.

Performing Art of Rajasthan - Folk music and musical instruments of Rajasthan; folk dance and folk drama of Rajasthan.

## **UNIT-XI**

Various religious cults, saints and folk deities of Rajasthan.

Various dialects and its distribution in Rajasthan; literature of Rajasthani language.

## **UNIT-XII**

Broad physical features- Mountains, Plateaus, Plains & Desert; Major rivers and lakes; Climate and Agro-climatic regions; Major soil types and distribution; Major forest types and distribution; Demographic characteristics; Desertification, Droughts & Floods, Deforestation, Environmental Pollution and Ecological Concerns.

## **UNIT-XIII**

Major Minerals-Metallic & Non- Metallic; Power Resources- Renewable and Non Renewable; Major agro based industries-Textile, Sugar, Paper & Vegetable oil; Poverty and Unemployment; Agro food parks.

## **UNIT-XIV**

Important Persons, Places and Current events of the State. National and International events of importance. National and International Organisations- (BIS, ICMR, ICAR, Council for Social Welfare, APEDA, Export inspection Council, FAO,WHO,ISO,WTO).

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Pattern of Question Papers :

- 1 Objective Type Paper.
- 2 Maximum Marks : 150
- 3 Number of Questions : 150
- 4 Duration of Paper : Three Hours
- 5 All Questions carry equal marks.
- 6 There will be **Negative Marking**.

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