

## MANIPUR PUBLIC SERVICE COMMISSION

### NOTIFICATION

Imphal, the 3<sup>rd</sup> December, 2014

**No. 7/14/2014-MPSC (DR) :** In continuation to this Commission Notification of even No. dated 08-11-2014, the scheme of Examination for Assistant Agriculture Officer Examination, 2014 will be as follows :-

### **SCHEME OF EXAMINATION**

#### **PART-A**

There shall be a written examination consisting of 200 Multiple Choice Questions (MCQ) carrying 300 marks with 3 (three) hours duration.

#### **1. General Studies: (50 MCQ)**

The questions on General Studies will cover the following topics:-

- a) General Science.
- b) Current events of national and international importance
- c) History of India and Indian National Movement
- d) Indian and World Geography
- e) Indian Polity and Economy
- f) General Mental Ability

Questions on General Science will cover general appreciation and understanding of science including matters of everyday observation and experience, as may be expected of a well-educated person who has not made a special study of any particular scientific discipline. In current events, knowledge of significant national and international events will be tested. In History of India, emphasis will be on broad general understanding of the subject in its social, economic and political aspects. Questions on the Indian National Movement will relate to the nature and character of the nineteenth century resurgence, growth of nationalism and attainment of Independence. In Geography, emphasis will be on Geography of India. Questions on the Geography of India will relate to physical, social and economic Geography of the country, including the main features of Indian agricultural and natural resources. Questions on Indian Polity and Economy will test knowledge of the country's political system and Constitution of India, Panchayati Raj, Social Systems and economic developments in India. On general mental ability, the candidates will be tested on reasoning and analytical abilities.

#### **2. Agriculture (150 MCQ)**

- i. Agro-climatology-elements and effect on plant growth, weather abnormalities and protective measures, Elements of crop production, classification of crops, farming systems. Tillage, Soil erosion, soil and water conservation. Soil productivity fertility and management of problematic soils, Soils organic matter, organic manures, fertilizers and

their use efficiency. Irrigation - role of water responses, quality of water and water pollution, water requirements of crops, methods of irrigation, drainage. Concept, scope and problems of dry land agriculture, Problem of weeds and control measures. Seed quality and certification. Agronomy of important crops like cereals, pulses, oilseeds, fiber crops, forage crops, sugarcane, sugar beet, potato, cumin, isabgol etc.

- ii. Objectives and methods of plant breeding, Mendel's laws of inheritance, heterosis mutations, gene concept, plant water relationship, seed testing, type of seeds, seed production.
- iii. Soil formation and profile development, basis ideas on soil survey and classification, soils of Rajasthan. Physical properties of soils, soil reaction, management of saline, alkaline and acid soils, fixation of phosphorus, potassium and ammonium in soils, essential plant nutrients and their functions, nutrient deficiency & toxicity symptoms, various tests to determine nutrient needs of plants, symbiotic and non-symbiotic nitrogen fixation, Organic manures and bio-fertilizers, chemical composition of FYM, night soil, oil cakes, bone meal, fish manure and common fertilizers. Olericulture - Classification of vegetables, nursery, transplantation, seed testing and storage, cultivation practice of cauliflower, cabbage, tomato, chillies, brinjal, carrot, radish, onion, pea, okra, muskmelon, watermelon and sweet potato, ornamental gardening and indoor gardening-lay out care & maintenance, cultivation of Roses. Pomology-layout of orchards, propagation methods, cultivation of mango, citrus, banana, guava, pomegranate, grapes, papaya, ber, phalsa, aonla, datepalm, Principles of fruits and vegetable preservation, dehydration, bottling, canning.

### **PART-B**

The interview/ personality test carrying 40 marks will be conducted for the candidates who qualify in the written Examination.

  
**Secretary**

#### **Copy to :-**

1. PA to Chairman, MPSC
2. PA to Member, MPSC
3. Official website of MPSC <http://www.mpscmanipur.gov.in>.
4. Notice Board.

## MANIPUR PUBLIC SERVICE COMMISSION

### NOTIFICATION

Imphal, the 3<sup>rd</sup> December, 2014

**No. 7/12/2014-MPSC (DR) :** In continuation to this Commission Notification of even No. dated 30-10-2014, the scheme of Examination for Food Safety Officer Examination, 2014 will be as follows :-

### SCHEME OF EXAMINATION

#### PART-A

There shall be a written examination consisting of 200 Multiple Choice Questions (MCQ) carrying 300 marks with 3 (three) hours duration.

#### **1. General Studies: (50 MCQ)**

The questions on General Studies will cover the following topics:-

- a) General Science.
- b) Current events of national and international importance
- c) History of India and Indian National Movement
- d) Indian and World Geography
- e) Indian Polity and Economy
- f) General Mental Ability

Questions on General Science will cover general appreciation and understanding of science including matters of everyday observation and experience, as may be expected of a well-educated person who has not made a special study of any particular scientific discipline. In current events, knowledge of significant national and international events will be tested. In History of India, emphasis will be on broad general understanding of the subject in its social, economic and political aspects. Questions on the Indian National Movement will relate to the nature and character of the nineteenth century resurgence, growth of nationalism and attainment of Independence. In Geography, emphasis will be on Geography of India. Questions on the Geography of India will relate to physical, social and economic Geography of the country, including the main features of Indian agricultural and natural resources. Questions on Indian Polity and Economy will test knowledge of the country's political system and Constitution of India, Panchayati Raj, Social Systems and economic developments in India. On general mental ability, the candidates will be tested on reasoning and analytical abilities.

## 2. Main Subject: (150 MCQ)

The questions on main subject will cover the following topics:-

### Chemical constituents of foods:

Desirable and Potentially undesirable food constituents and their importance. Water, Carbohydrates, Lipids, Proteins, Vitamins, Minerals: Classes, Nomenclature, structure and their chemistry.

### Enzymes:

Nomenclature, Classification and specificity of enzymes, enzyme Kinetics, enzymes and their role in modification of foods. Single cell protein (SCP). Metabolic Pathways: Carbohydrates, proteins and fats, catabolism and anabolism, Digestion and absorption, Assimilation and Transport of nutrients in human beings

### General characteristics of microorganism:

Classification, morphology, physiology, growth, nutrition and reproduction; Pure culture techniques and maintenance of cultures, control of microorganism. Sources of contamination. Microbiological standards of foods. Food poisoning and food borne infections, Food toxins, food plant sanitation, inspection and control, personnel hygiene, beneficial microorganisms and their utilization in food fermentation.

### Balance diet, Recommended Dietary Allowances (RDA), Dietary utilization and disturbances, Functions and energy values of foods, Basal energy metabolism:

BV, NPU, BMR, PER calculations, Protein quality as reference protein. Dietary allowances and standards for different age groups, Techniques for assessment of human nutritional status, Causes and preventions of malnutrition. Biochemical, clinical manifestation & preventive measures due to vitamins deficiency. Diseases caused due to food adulteration.

### Basic knowledge of major Indian crops, their total production, losses in storage, storage of perishable and non-perishable foods, Storage requirements:

Storage environment and its interaction with stored product; temperature and moisture migration. Storage practices (including fumigation and aeration of stored product). Storage structures for Perishable and non-perishables: bulk storage structures (bins and silos) Modified and Controlled atmosphere storage systems. Technology of fruits and vegetable products: Juices, pulp, Puree, Paste, Ketchup, Sauce, soup, concentrates and powders, Squashes and cordials. Beverage: Still and carbonated. James, Jellies and Marmalades. Preserves, candies and crystallized fruits. Processing of oilseeds Pre-treatments of oilseeds, oil milling, solvent extraction, impurities present in oils and fats. Vegetable oil refining, hydrogenation, enter esterification, processing of de-oiled cake into protein products, textured protein. Peanut butter, Margarine and Spread. Different quality parameters: Peroxide value, Saponification value, Iodine value, acid value, RM value, Polanski value, Adulteration and its detection in oils and fats. Rancidity, auto oxidation and anti-oxidants.

Fluid Milk: Physico-chemical properties, Production and collection, cooling and transportation of milk. Clarification and filtration of milk, pasteurized and homogenized milk.: Whole, Standardized, Toned, Double toned, skim and special milks, Test for milk quality and detection of dairy adulterant. Milk products: cream, butter, Butter oil/Ghee, Cheeses, Curd and Yoghurt, Sweet meat, Ice cream. Evaporated and Condensed milk, milk powders. Indian Dairy Products, Manufacture of casein, and Lactose. Causes and prevention of defects in dairy products.

Scientific slaughtering, Tendering and curing of meat, Beef Mutton, Pork Sausages and other meat products. Fish and poultry processing. Physical, Chemical Nutritional and Functional characteristics of Egg. Processing of Egg and egg products.

Principle underlying spoilage and preservation of foods: Low and high temperature, drying and dehydration, chemical, salt and sugar, Radiation, HHP, hurdle technology, Parboiling and Milling of paddy, Quality characteristics, Curing and aging of rice, Processed rice products. Wheat milling into flour and semolina, Flour grades and their suitability for baking purposes, Flour quality, Macaroni products, Baked products: Bread, Biscuits and cakes, Breakfast cereals. Dry and Wet milling of corn, Starches and its conversion products, Malting of barely, beer, wine, cider, vinegar, Milling of legume-pulses. Spices: Composition, Structure and characteristics. Preservation and processing of spices, Processing of Tea and coffee, cocoa processing, chocolate and confectionary products.

Quality Control/Quality Assurance, Legislation for food safety: National and International criteria, sampling, records, risk analysis and management. Microbial contamination, Nutritional imbalance. Pesticide residues, permitted food additives. Relevant Foods laws: PFA, FPO, SWMA, MPO, AgMark, and BIS Standards. Food Safety and Standard Act (FSSA). Testing food for its safety. The HACCP system and food Safety management systems used in controlling microbiological hazards. Food standards and Specifications, NAB Land ISO certification requirements.

### **PART-B**

The interview/ personality test carrying 50 marks will be conducted for the candidates who qualify in the written Examination.

  
Secretary

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