RAJASTHAN PUBLIC SERVICE COMMISSION

Syllabus for screening test for the Post of

Agriculture Research Officer (Agronomy)

Agriculture Department

Agriculture and Indian economy, agro-climatic zones of India and Rajasthan and their characteristics, factors affecting crop production, tillage: objectives, types and modern concepts in tillage: zero, minimum and conservation tillage, climate change and agriculture, global warming, causes and effects. Precision agriculture, plant growth regulators and their role in agriculture, growth and development, crop growth analysis, cardinal points, source-sink relationship.


Role of water in crop production, water resources of India and Rajasthan, irrigation statistics in India and Rajasthan, status of ground water depletion in Rajasthan, soil-water-plant atmosphere relationship, mechanism of water movement in soil, theories and mechanism of water absorption, soil moisture measurement, evapotranspiration, water requirement of field crops. Irrigation: methods, evaluation and scheduling, moisture stress and its mitigation, management of excess soil water and drainage, water saving techniques under irrigated conditions and conjunctive use, pressurized irrigation and fertigation, drainage, management of salt-affected soils and brackish irrigation water, consumptive use and water use efficiency.

Criteria of essentiality of plant nutrients, their role and deficiency symptoms, soil fertility and productivity concept, forms of nutrients uptake, nitrogen: transformation in soil, mineralization of N-compounds, losses of N in soil, methods to increase N-use efficiency, slow release fertilizers, phosphorus : availability and P-fixation, practices of improving applied and native phosphorus in soil, potassium : fixation and release of potassium, bio-fertilizers, N, P and K fertilizers and their application methods, compound fertilizers, secondary and micro nutrients, inter-relationship of nutrients availability and soil pH , integrated nutrient management.


Cropping systems: Principles and practices, cropping systems under irrigated and rain fed situations, assessment of yield advantages, integrated farming system: meaning, scope and different models, crop residue management, crop diversification, organic farming, its certification, principles and accreditation, green farming, sustainable agriculture, natural resources management.

Introduction, origin, history, production, distribution, cultural practices, plant protection and varieties of cereals, pulses, oilseeds, fibre, forage sugar and commercial crops as well as area, production and productivity at national and state level, post-harvest technologies in agronomical crops.

Principles of experimental design, correlation and regression analysis. Analysis of variance and co-variance. Statistical Designs used in Agronomical Experiments, transformation of data,

**

Pattern of question papers:
1. Objective type paper
2. Maximum marks : 100
3. Number of question : 100
4. Duration of paper : Two hours
5. All question carry equal marks
6. There will be negative marking.

**