

# **RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER**

## **SYLLABUS OF COMPETITIVE EXAMINATION FOR THE POST OF ASSISTANT AGRICULTURE RESEARCH OFFICER (AGRONOMY) AGRICULTURE DEPARTMENT**

### **Part-A**

**- 40 Questions**

### **General Knowledge of Rajasthan**

#### **Unit-I: History, Culture & Heritage of Rajasthan -**

Pre & early history of Rajasthan. Age of Rajputs: 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.

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

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

Various religious cults, saints and folk deities of Rajasthan.

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

#### **Unit-II: Geography, Natural Resource & Socio-Economic Development of Rajasthan -**

Geography of Rajasthan: 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.

Economy of Rajasthan: 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-III: Current Events and Issues of Rajasthan and India -**

Important Persons, Places and Current events of the State. National and International events of importance. New Schemes & Initiatives taken recently for welfare & development in Rajasthan.

**Unit-I**

Agro-climatic zones of India and Rajasthan and their characteristics, tillage: objectives, types and modern concepts in tillage: zero, minimum and conservation tillage, climate change and agriculture, precision farming, plant growth regulators and their role in agriculture, growth and development, crop growth analysis, cardinal points, source-sink relationship.

**Unit-II**

Weather and climate: variables and their relation with crop production, solar radiation: characteristics and energy balance in atmosphere, photosynthesis and efficiency of radiation utilization by crops, radiation distribution in crop canopy, Weather forecasting and remote sensing in India, weather bulletin, atmospheric pollution and its impact on climate and crop production.

**Unit-III**

Water resources of India and Rajasthan, importance of irrigation, its statistics in India and Rajasthan, soil-water-plant atmosphere relationship, mechanism of water movement in soil, types of soil water, theories and mechanism of water absorption, soil moisture measurement, 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, micro irrigation and fertigation, management of salt-affected soils and brackish irrigation water, consumptive use and water- use efficiency.

**Unit-IV**

Criteria of essentiality of plant nutrients, functions and their deficiency symptoms, critical limits of major and micro nutrients. 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, phosphorus: availability and P-fixation, practices of increasing effectiveness of applied and native phosphorus. Potassium: fixation and release of potassium, bio-fertilizers, N, P and K fertilizers and their application methods, secondary and micro nutrients, integrated nutrient management.

**Unit-V**

Weeds: biology, ecology and classification. Herbicides: history, classification, mode of action, basis of selectivity, weed management practices in common field crops, weed control under specific situations viz. non-cropped area, noxious farm weeds, parasitic weeds and their control, persistence of herbicides in soil, integrated weed management, herbicide resistance in weed and crops. Fate of herbicides in plant and soil.

**Unit-VI**

Dry land farming: history, role in economy, constraints in dry land farming, moisture stress, mechanism of crop adaptation for dry land, *in situ* moisture conservation techniques, contingent planning and mid-season corrections for aberrant weather situations, water harvesting, watershed management, improved dryland technology, alternate land use system, soil erosion: types and management and land capability classification.

## Unit-VII

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 and accreditation, sustainable agriculture, natural resources management.

## Unit-VIII

Introduction, origin, history, production, distribution, cultural practices, plant protection and varieties of cereals, nutri cereals, pulses, oilseeds, fibre, forage sugar and commercial crops.

## Unit-IX

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

\*\*\*\*\*

<b>Scheme of the examination</b>				
<b>S. No.</b>	<b>Subject</b>	<b>No. of Questions</b>	<b>Total Marks</b>	<b>Examination Duration</b>
Part-A	<b>General Knowledge of Rajasthan</b>	40	40	<b>2.30 Hours</b>
Part-B	<b>Concerned Subject (as prescribed in qualification)</b>	110	110	
	<b>Total</b>	<b>150</b>	<b>150</b>	

1. The competitive examination shall carry 150 marks and 150 questions of Multiple Choice Type questions.  
2. There shall be one paper. Duration of Paper will be Two hours and Thirty Minutes.  
Negative marking shall be applicable in the evaluation of answers. For every wrong answer one-third of the marks prescribed for that particular question shall be deducted.  
Explanation: - Wrong answer shall mean an incorrect answer or multiple answers.  
उक्त पद हेतु आयोजित की जाने वाली परीक्षा के लिए ओ.एम.आर. उत्तरपत्रक में प्रश्नों के विकल्प भरने के संबंध में विशेष निर्देश:-

1. Each question has five options marked as 1, 2, 3, 4, 5. You have to darken only one circle (bubble) indicating the correct answer on the Answer Sheet using BLUE BALL POINT PEN.
2. It is mandatory to fill one option for each question.
3. If you are not attempting a question then you have to darken the circle '5'. If none of the five circles is darkened, one third (1/3) part of the marks of question shall be deducted.
4. After solving question paper, candidate must ascertain that he/she has darkened one of the circles (bubbles) for each of the questions. Extra time of 10 minutes beyond scheduled time, is provided for this.

A candidate who has not darkened any of the five circles in more than 10% questions shall be disqualified.