

RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER

SYLLABUS FOR SCREENING TEST FOR THE POST OF AGRICULTURE OFFICER, AGRICULTURE DEPARTMENT

प्रश्न पत्र – प्रथम

Part - I

GENERAL HINDI

- 1 दिये गये शब्दों की संधि एवं शब्दों का संधि-विच्छेद ।
- 2 उपसर्ग एवं प्रत्यय-इनके संयोग से शब्द – संरचना तथा शब्दों से उपसर्ग एवं प्रत्यय को पृथक् करना, इनकी पहचान ।
- 3 समस्त (सामासिक) पद,की रचना करना, समस्त (सामासिक) पद का विग्रह करना ।
- 4 शब्द युग्मों का अर्थ भेद ।
- 5 पर्यायवाची शब्द और विलोम शब्द ।
- 6 शब्द शुद्धि – दिये गये अशुद्ध शब्दों को शुद्ध लिखना ।
- 7 वाक्य शुद्धि – वर्तनी संबंधी अशुद्धियों को छोड़कर वाक्य संबंधी अन्य व्याकरणिक अशुद्धियों का शुद्धीकरण ।
- 8 वाक्यांश के लिये एक उपयुक्त शब्द ।
- 9 पारिभाषिक शब्दावली – प्रशासन से सम्बन्धित अँगरेजी शब्दों के समकक्ष हिन्दी शब्द ।
- 10 मुहावरे – वाक्यों में केवल सार्थक प्रयोग अपेक्षित है ।
- 11 लोकोक्ति – वाक्यों में केवल सार्थक प्रयोग अपेक्षित है ।

Part - II

राजस्थान का सामान्य ज्ञान, इतिहास एवं संस्कृति

- 1 राजस्थान की भौगोलिक संरचना – भौगोलिक विभाजन, जलवायु, प्रमुख पर्वत, नदियाँ, मरुस्थल एवं फसलें ।
- 2 राजस्थान का इतिहास – *सभ्यताएं* – कालीबंगा एवं आहड़,
प्रमुख व्यक्तित्व – महाराणा कुंभा, महाराणा सांगा, महाराणा प्रताप,
राव जोधा, राव मालदेव, महाराजा जसवंतसिंह, वीर दुर्गादास, जयपुर
के महाराजा मानसिंह-प्रथम, सवाई जयसिंह, बीकानेर के महाराजा
गंगासिंह
- 3 भारतीय स्वतंत्रता संग्राम में राजस्थान का योगदान एवं राजस्थान का एकीकरण ।
- 4 विभिन्न राजस्थानी बोलियाँ ।
- 5 कृषि, पशुपालन एवं व्यावसायिक शब्दावली ।
- 6 लोक देवी-देवता – प्रमुख संत एवं सम्प्रदाय ।

- 7 प्रमुख लोक पर्व, त्यौहार, मेले – पशुमेले ।
- 8 लोक कथा, लोक गीत एवं नृत्य, कहावतें, लोक नाट्य, लोक वाद्य एवं कठपुतली कला ।
- 9 विभिन्न जातियां – जन जातियां ।
- 10 स्त्री – पुरुषों के वस्त्र एवं आभूषण ।
- 11 चित्रकारी एवं हस्तशिल्पकला – चित्रकला की विभिन्न शैलियां, भित्ति चित्र, प्रस्तर शिल्प, काष्ठ कला, मृदमाण्ड (मिट्टी) कला, उस्ता कला, हस्त औज़ार, नमदे–गलीचे आदि ।
- 12 स्थापत्य – दुर्ग, महल, हवेलियां, छतरियां, बावड़ियां, तालाब, मंदिर–मस्जिद आदि ।
- 13 संस्कार एवं रीति रिवाज ।
- 14 धार्मिक, ऐतिहासिक एवं पर्यटन स्थल ।

Pattern of Question Papers :

- 1 Objective Type Paper.
- 2 Maximum Marks : 360
- 3 Number of Questions : 120
- 4 Duration of Paper : Two Hours.
- 5 All Questions carry equal marks.
- 6 There will be **Negative Marking**.
- 7 60 questions each from Part - I & II.

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PAPER-II

Agro-climatic zones of India and Rajasthan. Elements of crop production and effect on plant growth. Weather and climate, weather forecasting, aerospace and remote sensing in India. Modern concepts in crop production, precision farming. Plant nutrients - functions and deficiency symptoms, sources and their application, soil reaction, interaction, soil-plant –water relationship, organic manures, fertilizers and bio-fertilizers, integrated nutrient management. Soil fertility, soil productivity and management. Water-management: water requirement, irrigation scheduling and efficiency, pressurized irrigation system. Weed management: principles and practices, common herbicides and their uses in important grain crops, oils seeds, pulses and fibre crops, forage and grass land and consequences of their use. IWM in field crops, management of parasitic and aquatic weeds. Problems of soil erosion in arid and semi-arid regions. Agronomic practices in soil and water conservation. Measures to prevent soil erosion. Watershed: concept, objectives and principles, integrated watershed management. Organic farming - objectives and scope.

Dry land farming - role in economy, aridity and their characteristics, constraints in dry farming areas, moisture conservation practices in dryland farming. Role of agro-forestry in soil and water conservation, silviculture, compatibility of crops, problems of seed germination etc. Appraisal of economics of farm forestry. Agronomy of important crops - cereals, pulses, oilseeds, fibre crops, forage crops, sugarcane, sugarbeet, potato, seed spices, Isabgol etc. Recommended varieties of important crops of Rajasthan.

Soil classification and soil survey, profile development, land capability classification, soil taxonomy, soils of Rajasthan. Soil physics-physical properties, moisture, air temperature. Physical chemistry of soil-colloids, soil reactions, buffering capacity, sources of charges and ion exchange. Soil microbiology- soil microbes, organic matter, humus fractions, structure, formation, C/N ratio, symbiotic and non-symbiotic nitrogen fixation. Transformation and mineralization of phosphorus, potassium, nitrogen and sulphur in soil. Straight fertilizers, mixed and compound fertilizers, Secondary nutrients, micronutrients and liquid fertilizer. Fertilizer control order and adulteration.

Management of problematic soils, management of crops in problematic soils, quality of irrigation water. Soil and water conservation. Soil and water pollution. Attacking soil fertility problem.

Olericulture - classification of vegetables, nursery, transplanting, seed testing and storage, cultivation practice of cauliflower, cabbage, tomato, chillies, brinjal, carrot, radish, onion, pea, okra, muskmelon, watermelon and sweet potato. Different styles of gardening, indoor gardening. Lawn & hedge – layout, care and maintenance, annual flowers, cultivation of major cut flowers like rose, gladiolus, tuberose and chrysanthemum. Pomology - layout of orchards, propagation methods, cultivation of mango, citrus, banana, guava, pomegranate, grapes, papaya, ber, phalsa, aonla, datepalm, Post harvest losses and principles of fruits and vegetable preservation, dehydration, jam, jelly, canning.

Insect pests spectrum in Rajasthan. Assessment of crop losses and their implication in pest management. Management of insects and pests. Insecticide application, hazards and safety precautions, insecticide formulations and their dilutions. Detection of insect infestation in stored products and their management. Community campaign for white grub and other polyphagus pests management. Rat control, management of ticks, mites and house hold pests. Integrated pest and disease management. Insecticidal pollution, residues and tolerance limit. Role and importance of fungi, nematodes, viroids, phytoplasma, bacteria, virus and other micro-organisms in agriculture. Binomial nomenclature, morphology and reproduction of fungi. Methods of plant disease management. Major diseases (fungal, bacterial, viral and nematode) of common field, vegetable and fruit crops of Rajasthan and their management. Biological control methods and plant quarantine.

Essential plant nutrients and their role, major and micronutrients. Methods of Plant Breeding for self, cross pollinated and vegetatively propagated crops, mutation breeding, use of polyploidy in crop improvement, concept of heterosis, type of hybrids, combining ability, DNA recombinant technology, transgenic crops and their scope, tissue culture techniques, seed testing, type of seeds, seed certification and seed standards for different crops.

Place of livestock in the national economy. Different livestock development programmes of Government of India. Important exotic and Indian breeds of cattle, buffalo, sheep, goat and swine. Reproductive behaviours like puberty, estrus, pregnancy and parturition. Measures and factor affecting fertility in livestock. Milk secretion, milking of animals and factors affecting milk yield and composition. Selection and breeding of livestock for higher milk and meat

production. Feed resources of India with special reference to Rajasthan. Classification of feed stuffs. Conservation of feeds and fodder, hay and silage making. Feeding and management of calves, growing heifers and milch animals. Housing principles, space requirement for different species of livestock. Disease control measures, sanitation and care. Natural and artificial insemination in farm animal, breeding, feeding and production records. Breed characteristics of poultry. System of housing, feeding and management in poultry. Incubation, hatching and brooding. Vaccination and prevention of diseases in poultry. Preservation and marketing of eggs, its economics and keeping quality. Economics of livestock production. Preparing dairy projects for financing.

Limnology- water science, physico chemical and biological properties of water, lake-ecosystem, water pollution and various types of water bodies. Fish morphology and anatomy, osmoregulation, respiration in fish. Different types of aquaculture systems and type of fisheries.

Peculiarities of Indian Agriculture, place of agriculture in Indian economy, five year plans, consumer behaviour, demand, supply, demand schedule and supply schedule, market equilibrium, elasticity. Principles of farm management. Agriculture marketing, marketing functions and institutions, WTO, contract farming, future market. Prices of agricultural commodities. Agricultural finance and credit, credit institutions, cooperative Banks, crop insurance. Agricultural development and poverty alleviation programmes. Linear programming, agricultural production functions- characteristics and optimizations.

Meaning and definition of extension education, philosophy of extension, process of extension education, basic concepts in extension (need, knowledge, attitude, skill, behavior, objectives, rural leadership and motivation). Need assessment, bench mark survey and PRA technique. Rural social institutions, caste, family and social groups. History and present programmes of extension in India specially Shriniketan, Marthandom, Gurgaon experiment, Nilokheri project, Etawah pilot project, CDP, Panchayati Raj, NES, IVLP, IRDP, T&V system, Lab to Land, ATIC, KVK, NATP, RKVY, ATMA, MNREGA, ICDS, NDS, HYVP, IAAP, SGSY, JRY and PMRY with reference to their year of start, objectives, activities, achievement and failure. Teaching- learning process, teaching methods, use of audio-visual aids in training & communication process. Programme planning & evaluation, impact assessment. Organizing trainings, front line demonstrations, field days, kisan mela, exhibition, campaign. writing reports, radio talks, news, writing of farm literature and scientific information.

Classification of data, measures of central tendency, measures of dispersion, Karl Pearson's measures of correlation coefficient, linear regression, test of significance, large sample test and small sample tests- 't', chi-square, F test. Theory of probability- addition and multiplication laws for two events. General principles of designs of experiment- CRD, RBD, LSD and factorial experiment. Concept of sampling- simple random sampling, stratified random sampling and systematic sampling.

Scope of farm mechanization in India. Common workshop tools, survey instruments, bullock drawn implements, implements for field preparation, land leveling and sowing. Measures of irrigation water, water lifting devices.

Definition, classification and functions of carbohydrates, lipids, proteins and amino acids. Enzymes- their classes, factors affecting activity, enzymes inhibition, active site and enzyme cofactors. Nucleotides, nucleic acids, their types and structure, transcription, translation and DNA replication. Carbohydrate metabolism – Glycolysis, Kreb's cycle, Glyoxalate pathway. Oxidation of fatty acids and their synthesis. Vitamins, their types and functions.

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