

## कृषि विश्वविद्यालय, जोधपुर

प्रशिक्षण अधिकारी (Training Officer) की भर्ती हेतु पाठ्यक्रम एवं परीक्षा की योजना

**परीक्षा की योजना :-** प्रशिक्षण अधिकारी की भर्ती हेतु एक लिखित परीक्षा आयोजित की जायेगी। बहुविकल्पीय प्रकार का एक वस्तुनिष्ठ प्रश्नपत्र होगा। प्रश्नपत्र का स्तर कृषि स्नातक डिग्री स्तर का होगा। प्रश्नपत्र में प्रश्नों की संख्या 100 होगी तथा अधिकतम पूर्णांक 300 अंक होगा। सभी प्रश्न समान अंको के होंगे। प्रश्नपत्र की अवधि 2 घंटे की होगी। प्रत्येक सही उत्तर के लिये 3 अंक प्रदान किये जायेंगे तथा प्रत्येक गलत उत्तर का 1 अंक काटा जायेगा। इस लिखित परीक्षा में प्राप्त अंकों के आधार पर प्रत्येक वर्ग में से 5 गुणा अभ्यर्थियों को साक्षात्कार के लिये बुलाया जायेगा। लिखित परीक्षा में अंको का 80 प्रतिशत तथा साक्षात्कार के अंको का 20 प्रतिशत वेटेज होगा। दोनों में प्राप्त कुल अंको के आधार पर मेरिट (वरीयता) सूची बनायी जायेगी।

**Note:-** There will be 100 multiple choice objectives questions. Each question will carry equal marks. Three marks will be awarded for correct answer and one mark will be deducted for wrong answer.

### Syllabus for Training Officer Recruitment Examination

Maximum Marks : 300

Time : 2 Hours

Agro-climatic zones of India and Rajasthan, adaptation and distribution of crops. Modern concepts of tillage. Management of crop residue, soil organic matter, bio fertilizers, green manuring, oil cakes, fertilizers. Consumption of straight and complex fertilizers, foliar application. Plant nutrients: function, occurrence, cycling in soils and their availability. INM concept and vermi-compositing. Cropping and farming systems. Precision and organic farming. Irrigation in India and Rajasthan. Quality of irrigation water, requirement, management, drainage. Dryland agriculture in India and Rajasthan. Agronomical study of important crops of Kharif and Rabi of Rajasthan. Problematic weeds of Rajasthan and their physical, cultural, biological and chemical control.

Soil erosion, conservation, essential nutrients, their functions, deficiency, symptoms, soil fertility evaluation, nutrients, recommendation. Manures and fertilizers. Management of saline, saline sodic, sodic and acid soils. Micro-organism in soils and their role. Soil as a medium of plant growth, soil composition, formation, profile, survey and classification. Remote sensing. Physical properties of soil, soil moisture, soil air and temperature in relation to plant growth. Clay minerals, organic colloids, cation exchange phenomenon, soil reaction and buffering capacity.

Chemistry of carbohydrates, lipids, proteins, vitamins and plant (phyto) hormones. Chemistry of Nucleic acid and their functions. Outlines of metabolism of carbohydrates, lipids and protein. General account of enzymes, coenzymes and secondary metabolites. Brief outlines of plant tissue culture and plant biotechnology.

Animal Kingdom - Classification and nomenclature. Economic importance of invertebrates and vertebrates. Management of insect-pest and mites in agriculture. Ecosystem and wild life preservation. Insect dominance. Anatomy and morphology of grasshopper. Insect reproduction and development; identification. Lac culture, sericulture and apiculture. Physical, mechanical, cultural, chemical, biological, legal and modern approaches to control insect-pests.

Importance of microbes in agriculture. Micro-organism and their classification, nutrition, growth and reproduction. Host-microbe relationship. Morphology, reproduction, nutrition and nomenclature of fungi. Classification of plant pathogenic fungi. Importance of plant pathology. Symptomatology. Disease development and methods of plant disease control of important crops (cereals, pulses, oil seeds, and cash crops) and IDM.

Introduction and brief history of plant parasitic nematodes, their morphological structure, biology, ecology and various physiological processes. Symptomatology and nematode diseases with special reference to root-knot, reniform, citrus, ear cockle, tundu and molya and their management. Interaction of plant parasitic nematodes with other micro-organisms like fungi, bacteria and viruses.

Variation - its causes and importance in Plant Breeding. Pollination and fertilization. Cell structure and division. Mendel and his work. Gene interactions. Multiple alleles and blood groups. Linkage, crossing over and mapping of chromosomes. Sex determination. Multiple genes. Gene mutations, chromosomal aberrations and polyploidy. Cytoplasmic, chromosomal inheritance. Breeding methods of self, cross and vegetatively propagated crops. Sterility and incompatibility and application in plant breeding. Heterosis. Seed production and certification of important crops. Breeding for diseases and pest resistance. Mutation and polyploidy breeding. Application of genetic engineering and biotechnology in crop improvement.

Floriculture - ornamental gardening styles, features. Winter, Summer and Rainy season annuals. Flower arrangement. Vegetables - type of farming and classification. Raising of seedling in nursery. Cultivation of important vegetables. Pomology- Selection of site, preparation and layout of orchard, planting system. Principles of fruit production, propagation, cultivation of important fruits of Rajasthan. Methods of preparation of

juices, squashes, jams jellies and marmalades, preserves, squashes and pickles, canning and dehydration of fruits and vegetables.

Cell physiology, plant water relations, photosynthesis and photo-respiration. Respiration. Inorganic plant nutrition, physiology of flowering, Photoperiodism. Physiology of growth, PGR and regulation. Seed germination and dormancy. Crop production in relation to stress.

Importance of Livestock and poultry in national economy. Cattle management and hosing of cattle, buffalo, sheep, goat poultry and camel. Prevention and control of common livestock diseases. Classification of feeding stuff and computation of balanced ration. Important breeds of farm animals and poultry. Methods and systems of breeding. Principles and methods of selection. Purchase of dairy animals. Infertility, sterility, their causes and prevention. Hatching, brooding and feeding management in poultry.

Meaning of utility, classical production functions and law of diminishing returns. Factors affecting demand and supply. Peculiarities of agriculture. Agricultural finance. Credit and credit institution. Regulated market. Marketing channels and price spread. Economic principals of farm management, financial tools of farm management, farm planning and budgeting. Risk and uncertainty in agriculture. Importance of agri-business in Indian Economy. Discounted and un-discounted methods of project analysis.

Extension education- definition, philosophy and principles. Rural sociology scope. Rural institutions- caste and family, rural leadership. Teaching-learning process. A.V. aids, teaching methods and their use in different situations. Programme planning and evaluation in extension education. Communication process and its elements. Diffusion of agriculture innovation. History of early extension programmes in India, five year plans. Developmental programmes and institutions- IRDP, HYVP, RLEGP, T&V, NAIP, RKVY, TRYSEM, PMRY, Swarn Jayanti Gram Swarajgar Yojna, KVK, ATIC, IVLP and ATMA.

Meaning and scope of statistics. Data summarization. Measures of central tendency and dispersion. Elementary idea of correlation and regression. Tests of significance. Field experimentation. Analysis of variance and its application in basic design of experiments.