RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER

SYLLABUS FOR EXAMINATION FOR THE POST OF LECTURER
AGRICULTURE (SCHOOL EDUCATION)

PAPER-II

Senior Secondary Level


Importance of fruits and vegetables in human diet. Crop diversification and processing industry. Orchard- location and layout, ornamental and kitchen gardening. Planting system, training, pruning, intercropping, protection from frost and sunburn. Tree, shrubs, climbers, annuals, perennials- definition with examples. Propagation by seed, cutting, layering, budding and grafting. Nursery, its objectives and raising of seedlings. Scope and importance of medicinal crops. Cultivation practices, processing and marketing of: fruit crops- (mango, papaya, banana, guava, citrus, grapes, brinjal, date palm pomegranate) vegetables- (radish, carrot, potato, onion, cauliflower, brinjal, tomato, spinach, okra, chilli and cabbage), flowers- (gladiolus, canna, chrysanthemum, roses and marigold). Principles and methods of fruit and vegetable preservation. Preparation of jellies, jams, ketchup, chips, pickles and their packaging.

Graduation Level


Agriculture Statistics. Measurement of Central Tendency, Corelation, Regression, Test of Significance, F& Chi Square test, Experimental designs, CRD, RBD, SPD. Farm power and machinery

Soil fertility evaluation, nutrient recommendation. Formation and management of saline, saline sodic, sodic and acid soils. Micro-organisms in soils and their role. Physical, Chemical and Biological properties of soil. Clay minerals, Soil reaction and buffering capacity


Photosynthesis and photorespiration. Respiration. Physiology of flowering, Photoperiodism. Physiology of growth, PGRs and their role. Seed development, germination and dormancy.

Classification of economically important insects and mites upto family level. Study of ecosystems and wild life preservation. Insect dominance. Concept and principles of IPM, Components of IPM: Physical, mechanical, cultural, chemical (including novel insecticide molecules), biological, legal and other modern approaches. Identification, nature of damage, bionomics and management of insect-pests and mites of agricultural importance. Lac culture, sericulture and apiculture.


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). Rural social institutions, caste, family and social groups. Extension programmes in India. Teaching- learning process, teaching methods, use of audio-visual aids in training & communication process. Organizing trainings, front line demonstrations, field days, kisan mela, exhibition, campaign. Writing reports, radio talks, news, writing of farm literature and scientific information.

Meaning and scope of Economics. Basic concept : Goods and services, desire, want, demand, utility, cost and price, wealth, capital, income and welfare. Agricultural economics : meaning, definition, characteristics of agriculture, importance and its role in economic development. Demand : meaning and definition, kinds of demand, law of demand, demand schedule and demand curve, determinants of demand. Supply: Stock v/s supply, law of supply, supply schedule, supply curve, determinants of supply. Cost: Cost concepts, short run and long run cost curves. Concepts of rent, wage, interest and profit. National income: Meaning and importance, concepts of national income accounting and approaches to measurement. Tax : meaning, direct and indirect taxes, agricultural taxation, GST. Credit needs and its role in Indian Agriculture. Agricultural credit : meaning, definition and classification. 3 R's, 5C's and 7P's of credit. Sources of agricultural finance : institutional and non-institutional sources. An introduction to higher
financing institutions - RBI, NABARD, ADB, IMF, World bank, Insurance and Credit Guarantee Corporation of India. Financial statements- Balance Sheet and Income Statement. Meaning, concept and principles of farm management. Law of returns and returns to scale. Farm business analysis. Importance of farm records and accounts in managing a farm, farm inventory, balance sheet, profit and loss accounts. Meaning and importance of farm planning and budgeting, Concept of risk and uncertainty in agriculture production.


Post Graduation Level

Adverse climatic factors, Remote sensing, Herbicidal resistance, site specific nutrient management, concept and importance of water shed management in dryland areas, Good agronomic practices, Agroforestry systems, Effect of excess water on plant growth and production, drought, measurement of irrigation water; irrigation efficiencies, design of irrigation structures, Amelioration of salt affected soils.

Protected cultivations of vegetables and flowers, Role of PGR's in Horticulture, Micropropagation, Ripening and Maturity indices of important vegetables and fruits; Landscape, gardening and postharvest management of Flowers, dryland Horticulture.

Transgenic plants in relation to IPM. Exploitation of natural enemies in insect pest management, Semiochemicals and newer molecules of insecticides, biopesticides. Rearing of parasitoids and predators for inculcative and inundative release.

Major epidemics and their social impact. Edible fungi. General principles of plant disease management and IDM.

Combining ability and nature of gene action, Denaturation and renaturation, Gene amplification, Transposable genetic elements, Types/kinds of genes, Genomics and proteomics, Gene regulation, allel mining and TILLING, Bioinformatics, Nanotechnology, DNA sequencing, gene pyramiding, karyotyping, Alien addition and substitution lines, Endomitosis, Balanced Lethals.


Factors affecting productive and reproductive efficiency in livestock and poultry. Selection and breeding of livestock and poultry for higher production. Constraints of cattle, buffalo, sheep, goat and camel production in Rajasthan. Management of livestock and poultry under adverse
climatic conditions. Economics of milk and egg production. Common nutritional disorders in livestock and poultry.

Need assessment, bench mark survey and PRA technique. Programme planning & evaluation, impact assessment.

**Educational Psychology, Pedagogy, Teaching Learning Material, Use of computers and Information Technology in Teaching Learning**

1. Importance of Psychology in Teaching-Learning:
   - Learner,
   - Teacher,
   - Teaching-learning process,
   - School effectiveness.

2. Development of Learner
   - Cognitive, Physical, Social, Emotional and Moral development patterns and characteristics among adolescent learner.

3. Teaching – Learning:
   - Concept, Behavioural, Cognitive and constructivist principles of learning and its implication for senior secondary students.
   - Learning characteristics of adolescent and its implication for teaching.

4. Managing Adolescent Learner:
   - Concept of mental health and adjustment problems.
   - Emotional Intelligence and its implication for mental health of adolescent.
   - Use of guidance techniques for nurturing mental health of adolescent.

5. Instructional Strategies for Adolescent Learner
   - Communication skills and its use.
   - Preparation and use of teaching-learning material during teaching.
   - Different teaching approaches:
   - Teaching models- Advance organizer, Scientific enquiry, Information, processing, cooperative learning.
   - Constructivist principles based Teaching.
6. ICT Pedagogy Integration:

- Concept of ICT.
- Concept of hardware and software.
- System approach to instruction.
- Computer assisted learning.
- Computer aided instruction.
- Factors facilitating ICT pedagogy integration.

**Paper – II Subject Concerned**

**Duration : 3 Hour**

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<th>S.No.</th>
<th>Subject</th>
<th>No. of Questions</th>
<th>Total Marks</th>
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<td>1</td>
<td>Knowledge of Subject Concerned : Senior Secondary Level</td>
<td>55</td>
<td>110</td>
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<td>2</td>
<td>Knowledge of Subject Concerned : Graduation Level</td>
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<td>3</td>
<td>Knowledge of Subject Concerned : Post Graduation Level</td>
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<td>4</td>
<td>Educational Psychology, Pedagogy, Teaching Learning Material, Use of Computers and Information Technology in Teaching Learning.</td>
<td>30</td>
<td>60</td>
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<td><strong>Total</strong></td>
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<td><strong>300</strong></td>
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**Note**: 1 All the question in the Paper shall be Multiple Choice Type Question.

2 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 answer.