Rajasthan Public Service Commission, Ajmer

SYLLABI OF THE PAPER/SUBJECTS PRESCRIBED FOR THE MAIN EXAMINATION

OPTIONAL SUBJECTS

AGRICULTURE PAPER-I (Code No. 01)

Agronomy (including statistics): Agro Climatology-Major agro-climatic zones of India and Rajasthan. Cropping pattern in different agro-climatic zones. Elements of crop production, Tillage and tilth, cropping system including concepts of intercropping, multiple cropping, really cropping, mixed cropping, sequential cropping, multistoried cropping and their importance in relation to crop production, crop rotation. Soil erosion : Nature and extent of problem in Rajasthan, agronomic practices for minimizing water and wind erosion, Soil conservation practices and structures. Weed management.

Soils, fertilizers and irrigations : Soils and soil management. Different types of manures and fertilizers including bio fertilizers, soil testing, essential major and minor plant nutrients. Soil-water-plant relationship. Methods of irrigation. Present status and sources of irrigation in the country and state of Rajasthan. Qualities of irrigation water. Management of irrigation in major crops.

Field Crops : Study of cops with reference to origin, distribution in Rajasthan and India, classification of important agricultural crops, package of practices for important cereals i.e. Wheat, Barley, Bajra, Sorghum, (Jowar), Maize, paddy, pulses i.e. Gram, Moth, Moong, Cowpea, Oilseed Rape & Mustard, Groundnut, Til, Soyabeen, other crops, such as Cotton, Sugarcane, Cluster bean, Cumin, Coriander, Opium, Dry land agriculture concept, problem and extent of dry land agriculture in India and Rajasthan.

Soil Science : Soil genesis, soil survey & classification; physical, chemical and microbiological properties of soil; soil water; soil colloids; problem soils, their reclamation and management; soil microbes and their classification; soil organic matter, its formation and functions in soil, C/N ratio; Organic manure their preparation, composition, chemistry of decomposition and effects of soil properties. Fertilizer manufacture-process and chemistry, straight, compound and mixed fertilizers and their effect on soil properties.

Agricultural Botany : Water relations, absorption and movement of water in plants, photosynthesis; respiration; growth and development; environmental factors affecting the growth.

Genetics : Importance and historical background of genetic; inheritance of simple characters in plan, gene interactions and multiple alleles, linkage and crossing over; DNA-structure & function.

Plant Breeding - Its significance. Methods of breeding in self, cross & vegetatively propagated crops. Introduction, selection, hybridization, mutation, Heterosis breeding & population improvement. Exploitation of heterosis in Maize, Bajra & Sorghum. Improved seed types and their production. Genetic engineering. Ultra structure of plant cell; structure & function of cell organelles, classification of plant kingdom.

Horticulture : Olericulture - Types of vegetable farming; classification of vegetable crops' layout of vegetable garden; package of practices of important vegetables - Peas, Tomato, Cole Crops, Cucurbits, Okra, Brinjal, Radish, Carrot, Pomology Selection of site and layout of orchard. Methods of propagation, training and pruning of fruit plants; package of practices of Citrus, Mango, Ber, Papaya, Guava, Pomegranate; packing, storage and marketing. Floriculture and ornamental gardening- layout, care & management of garden and indoor plants. Fruit and vegetable technology. Principles of fruit and vegetable preservation, dehydration, bottling and canning. Scope and importance of Social Forestry & Agro forestry.

Plant Protection : Major diseases of Field, vegetable, orchard and plantation crops and their control measures. Causes and classification of plant diseases. Principles of Plant disease management with special reference to biological and integrated approach.

Studies of insect, pests and their control measures including integrated pest management of field crops, polyphagous pests and their control. Pesticides - Doses and methods of application. Equipments - Calibration, maintenance and their use. Aerial operations, insecticidal residues and their hazards Legislative measures for plant protection and quality control of pesticides Storage and post harvest technology. Lac culture, apiculture, and sericulture.

AGRICULTURE PAPER-II

Livestock Production : importance of livestock in Rajasthan and India. Cattle, buffalo, goat, camel, sheep and poultry. Care and management of farm animals. Selection of livestock for mild, meat, wool and eggs. Methods of breeding. Animal nutrition-major and minor nutrients, digestion and absorption; nutritive value of feeds and fodders; feeding standards; balance ration Important fodder crops & grasses, pasture management, hay and silage making. Health and hygiene.

Common infections, prevention and control of diseases care of sick animals.

Dairying : Present position of dairy animals in Rajasthan and India milk production and utilization, Collection, transportation, grading, standardisation, pasteurization, homogenization, storage, distribution and marketing of milk Common microorganism. sources and stage of contamination and control. Milk products-manufacture of cream, butter, ghee, cheese, ice-cream, dahi etc. Human nutrition-nutritional status, assessment and problems; importance of nutrition education.

Extension Education : Principles, Philosophy, scope and objectives. Rural and urban society; basic village institutions, social institutions, rural leadership-type of leaders; rural family; cultural & socio-economic changes, social control and social process. Early extension work in India, Rural preconstruction programme in India including community development programme, IADP, IAAP, HYVP, SFDA, MFAL, Operational Research, TRYSEM, NAEP, DRDA, IRDP, TDAP, Recent trends in agricultural extensions. Special incentives for small marginal & other depressed classes of farming community.

Extension education as a process of teaching and learning; extension teaching methods; A.V.aids; cone of experience, types of slides & film strips; programme planning and evaluation; communications; adoption and diffusion process, types of farmers in relation to adoption of innovations. Training & management in extension education. Role of Farm-women in agricultural extension. Agricultural information; elements of effective teaching; T and V system.

Agricultural Economics : (including Farm Management) : Scope of agricultural economics., differentiation between agricultural economics and industrial economics. Peculiarities of Indian agriculture, population theories. Problems of over population, Problems of land-Land use pattern; land utilization in India and Rajasthan and variations among states. Small and fragmented holdings, consolidation of holding; legislations in agriculture; management of waste lands.

Agriculture labor : Present position and problems; minimum wages. agricultural financing and rural banking - Meaning and importance of finance in agriculture; capital and credit requirement; commercial banks; social control on banks; bank nationalization; Rural Regional bank; RBI, AFC, ADB, IMF, DIR. Lead Bank, Area approach, village adoption scheme, NABARD. (A.R.D.C.); co-operative financing - PACS, CCB, LDB, poverty and rural indebtedness.

Farm Management : Essentials in selecting a farm; various systems of farming; basic economic principles in farm management., farm records and accounts. Farm efficiency measures. Farm planning and budgeting.

Problems of management in agriculture. Risk and uncertainty in a agriculture. Droughts and floods, insurance of crops & animals.

Agricultural Engineering : Study of common workshop tools of carpentry, blaksmithy and fitting shops, Study of different instruments and equipments used in land surveying. Sources of farm power on an average farm. Scope of farm mechanisation in India. Maintenance of agricultural machinery and implements, I.C. engines, water fitting devices, electric motors. Wind and solar energy as a source of farm power.

Soil and water conservation engineering, water harvesting, storage and recycling, watershed management. Sources of irrigation water. Water measuring devices. Lining of water channel. Irrigation layout. Implements used for seed-bed preparation, sowing and fertilizer application, interculture and land leveling etc. Harvesting and threshing equipments-manual, animal and-power operated. Storage structures.

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