

**FURTHER DETAILS REGARDING MAIN TOPICS OF
PROGRAMME No. 11/2019 (Item No.9)**

SPECIALIST(SOIL SCIENCE/SOIL CONSERVATION)

KERALA STATE LAND USE BOARD

(Category No.079/2018)

Soil

Factors of soil formation, soil forming processes, weathering of rocks and minerals, transformations, soil profile, soil classification with emphasis on soil taxonomy, soil survey and its types, soil series characterization, soil survey interpretation

Soil texture, mechanical analysis, textural classes; Soil structure – characterization and management; Soil aggregation, soil water, soil moisture constants

Soil fertility parameters – essential plant nutrients – macro and micronutrients, factors affecting availability, critical limits in soil, correction of deficiencies, soil fertility evaluation, soil testing, soil health, soil quality in relation to sustainable agriculture

Crop production technology

Classification of crops – agronomic, botanical, horticultural, ontogenic, special categories, etc.;; Seeds and sowing, tillage and tith, crop density and geometry,

Crop water requirement, irrigation – scheduling criteria and methods, quality of irrigation water

Plant propagation – methods, propagating structures; Training and pruning; Pollination, pollinizers and pollinators; Fertilization and parthenocarpy; Plant bio-regulators in horticulture

Package of practices recommendations – rice, maize, finger millet, bajra, sorghum, cowpea, green gram, black gram, groundnut, sesamum, coconut, arecanut, cashew, tea, coffee, banana, mango, pineapple, okra, amaranthus, solanaceous vegetables, cucurbitaceous vegetables, pepper, cardamom, medicinal and aromatic plants

Cropping systems, farming systems, organic farming and sustainable agriculture

Cropping pattern, cropping systems, multiple cropping systems, farming system – concept, types and systems, evaluation of cropping and farming systems, Integrated farming systems – characteristics, components and advantages; Homestead farming – features, components, advantages; Sustainable agriculture - Indicators of sustainability, conservation agriculture strategies, HEIA, LEIA, LEISA; Organic agriculture – history, concepts, objectives, green manures, cover crops, composting techniques; current status of organic farming – initiatives in India and Kerala – NPOP, Accreditation agencies – Certification agencies - NSOP

Rainfed agriculture and watershed management

Rainfed agriculture – types, problems and prospects in India and Kerala, soil and climatic conditions in rainfed areas; Drought – types of drought, effect of drought on crops, crop

adaptation and mitigation; Water harvesting – importance, techniques, Watershed management – concept, objectives, factors in watershed management

Remote sensing – components, sources of radiation, platforms - Application of remote sensing techniques; Geographical Information System – application – land use surveys, watershed and drought management.

Land use planning

Land use planning – concepts and techniques, soil site suitability evaluation, land capability classification, land irrigability classification, approaches for managing soils and landscapes in the framework of agroecosystem, major soil groups of India and Kerala, Agroecological Zones and Units of Kerala with reference to the recent classification of NBSS&LUP

Soil erosion – effects and factors, types, mechanisms of water erosion, principles of erosion control, wind erosion, soil conservation approaches, erosion control structures

Soil degradation – extent, types, problems, remediation, monitoring, reclamation of problem soils

Crop protection

Pest and diseases of major crops of Kerala; Methods of control – host plant resistance, cultural, mechanical, physical, legislative, biological and chemical; Integrated pest and disease management; Weed management - major weeds of Kerala, principles and methods of weed management, herbicides – types / classification, aquatic weeds and parasitic weeds and their management; Ecological engineering for the management of pests and diseases

Social sciences

Extension / agriculture development / rural development programmes launched by ICAR / Government of India; Community development – meaning, definition, concept and principles; Agricultural credit – meaning, definition, need, classification; 4Rs and 3Cs of credits; Sources of agricultural finance; Microfinancing including KCC, Lead bank scheme; Higher financing institutions – RBI, NABARD, ADB, IMF, World Bank, Insurance and Credit Guarantee Corporation of India; Basic guidelines for preparation of project reports – Bank norms.

Agricultural marketing – classification and characteristics, market functionaries and marketing channels, quality control and labeling (AGMARK)

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper