

Annexure "A"

Syllabus for Written test (Objective Type)

Marks:- 120

Time: - 2.00 Hours

Soil-General Concept and importance, soil texture (Soil Particles): (20 Marks)

- Types of Soil- Sandy, Clayey and loam soils and their general properties i.e. water retention, aeration, nutrient status,
- Soils organic matter- meaning, sources and importance.
- Soil reaction- meaning, acidic and alkaline soils concepts, their effect on plant growth and management.
- Plant Nutrients- names of essential macro and micro nutrients, important functions of N,P and K, their deficiency symptoms in plants.
- Manures- definition, different, types and importance (FYM, compost, Green Manure).
- Fertilizers- Definition, names of common NPK fertilizers, their nutrient percentage, recommended NPK doses for paddy, maize, sarson, Wheat, Apple and Cherry trees grown in Jammu & Kashmir, their mode and methods of application.
- Soil Testing- and its importance.
- Soil erosion- causes, types of erosion, soil conservation a methods with reference to J&K State.
- Introductory Botany.
- Plant parts, root, leaf, stem, flower and their functions
Modified plant parts with functions,
- Photosynthesis and Importance.
- Seed Structure, Importance, Conditions necessary for germination, Minimum Standards for seed certification, Breeder foundation and certified seed.
- Self and cross- Pollination.
- Elementary studies of following plant families of economic importance.
 - Graminaceae (Wheat and Maize)
 - Rosaceae (Apple)
 - Solanaceae (Tomato)
 - Cucurbitaceae

- (Bottlegourd)
- Leguminacca (Pea)

Plant protection fundamentals: (20 Marks)

- Definition of disease and their causes
- Symptomology (leaf spot, wilt, blight, mildew, scab etc.)
Different management Methods
- Fungicides: Definitions, types, formulations, names of common fungicides used in Jammu & Kashmir; care in handling.
- Plant protection equipment, spraying and dusting machines, their working, calibration and maintenance,
- Definition of insect pest, general morphology of insect
Different insect pest viz, borera, bug, geseed, their
- Economic threshold values
- Insecticides, definition, types. Formulation, names of common insecticides used in Kashmir, cadre in handling.
- Insect pest management methods.
Extension Education
 - Agri. Extension Education Definition and Importance. Principles, Objectives.
 - Qualities and role of Extension Worker
 - Extension teaching Methods; Classification, approaches i.e., individuals, Group, Mass, discussions, pamphlets, bulletins, charts, diagrams, exhibitions, campaigns, Kissan mela.
 - Brief description of IRDP, SFDA, IAQP, NAEP, KVK with social reference to
 - J&K STATE
 - Farm Planning
 - Village Panchayat and its functions
 - Collections of socio- Economic data; kind of schedules

Nursery Management and propagation

20 Marks

- Location, Soil, fencing, nearness to water source, layout of seed bed, nursery bed, stool bed, stratification.
- Building nursery store and workshop, Store and workshop, tools and implements. Maintenance of nursery.
- Selection of mother plant for bud wood, root stock.
Budding, grafting, layering
- Fruit production
- Selection of Orchard site.
Layout of Orchard.
- Orchard floor Management
Planting, Training, Pruning.
- Cultural Practices including irrigation.
- Cultivation of Apple, Pear, Cherry, Plum, Grapes, Almond, Walnut, Strawberry, Mango and Guava Under following headings;
- Soil, Commercial varieties, spacing, fertilizers, irrigation, harvesting, yield.

Orchard Diseases

20 Marks

- Major diseases, Symptoms, damaging stage and control measures of;
- Apple and pear viz; Scab, Leaf Spot, Mildew Canker. Viz; Stone fruits (Peach, Plum, Apricot, Cherry, Almond) viz Blight and leaf spots.
- Walnut viz; Mistletoe etc
- Grapes viz; Anthracnose, Mildews.
Plants protection –(B)
- Major Insect Pests, damaging stage, Symptoms and control measures with respect to following fruit plants (under Jammu and Kashmir Conditions);
- Apple and Pear viz; Sanjose Scale, Borer, Leaf Minor, Aphids mites, Caterpillars.
- Stone fruits (Peach, Plum, Cherry, Almond, Walnuts) viz; Leaf curling aphids, Chaffer beetle etc.
- Pomegranate viz; Anar butter fly.

Physiology (Introductory)**20 Marks**

- Introduction to the subject of postharvest technology; nature and extent of postharvest losses in fruits; Factors responsible for post harvest loss. Factors affecting rate of respiration and transpirations; ripening of fruits, Quality attributes of fruits.

Fruit Handling and Storage**20 Marks**

- Harvesting techniques of fruits, criteria for harvest maturity of fruits, principle and techniques of pre-cooling, advantages of scientific grading; grade standards for apple, advantages of fruit packing; use of various packing materials; principles of refrigerated and controlled atmosphere storage of fruits, transportation of fruits and its problems; Marketing channels of apples.