

WBPSC Horticulture Assistant Director Syllabus || Check Assistant Director of Horticulture Exam Pattern

West Bengal PSC Assistant Director of Agriculture Exam Pattern

Subjects	Marks	Duration
General Knowledge	100	2 hours
Technical Subjects		
Reasoning		
Computer Knowledge		
Numerical Ability		

PSCWB Horticulture Assistant Director Syllabus

General Knowledge:

- Geography.
- International Affairs.
- Politics.
- Culture.
- Economy.
- Banking.
- Arts.
- Current Events.
- Awards.
- Sports.
- Indian History.

Reasoning

- Seating Arrangements
- Distance and Arrangements
- Analogy and Classification
- Blood and Coded Relations
- Data Sufficiency and Analysis
- Statement and Conclusion
- Ranking and arrangements
- Series and Alphabets

- Directions

Numerical Ability

- Allegations and Mixtures
- Ares
- Permutation and Combination
- Ration and Proportion
- Stocks
- Races and games
- Logarithms
- Partnership
- Banker's Discount
- Probability
- Averages
- Chain Rules
- Compound Interest
- Square root
- Decimal fractions
- Numbers
- Boats and Streams
- Heights and Distance
- Simple Interest
- Volumes and Surface
- Time and Work
- Problems on Age
- Problems on HCF & LCF

Computer Knowledge

- Software Installing
- Ms. Word
- Ms. Powerpoint
- Data Transfer
- Computer organization
- MS Office Suite
- MS Excel
- The Hardware of Computers
- Internet
- MS-Dos

Technical Subjects

Manures and Manuring:

- Organic and inorganic manures

- Biofertilizers
- Fertigation
- Bio Agents.

Essential Elements:

- Functions
- Deficiency symptoms
- Fertilizer schedule
- Time and method of application.
- Physiological disorders
- Control measures

Irrigation:

- Water requirement of different Horticultural crops various irrigation methods including Drip, Sprinkler, Fogging.
- Plasticulture
- Mulching types.

Training and Pruning:

- Principles and Methods
- Canopy Architecture
- Planting systems and Planting densities

Flowering:

- Pollination
- Fruit set
- Fruit drop
- Causes and Prevention
- Unfruitfulness associated with External and Internal factors

Maturity:

- Harvesting
- Pre and Post Harvest Handling
- Processing and Preservation.
- Role of plant growth regulators and their commercial applications in the Horticulture

Seed and Vegetative Propagation:

- Advantages and disadvantages – seed propagation

- Seed Treatment
- Vegetative propagation

Tropical, Subtropical, Temperate and Sub-Temperate Horticultural Crops:

- Climate and Soil
- Propagation practices spacing and planting – varieties – Nutrient water and weed management mulching
- Intercropping
- Use of growth regulators
- Yield
- Economics
- Integrated pest and disease management
- Pre and Postharvest practices
- Processing and Preservation – Marketing, High-density orchards. Scope of cultivation of temperate and sub-temperate fruits, flowers, vegetables, medicinal and aromatic plants in West Bengal, present area, production and productivity of temperate, sub-temperate horticultural crops of West Bengal – reasons for the decline of Mandarin orange production, ways and means to rejuvenate it, area, production and productivity of it

Fruit Crops:

- Kiwi, Peach, Pear, Plum, Nectarine, Strawberry, Apple, Walnut, Berries, Hazelnut, Chestnut, Avocado, Fig, minor fruits – their propagation, scope of commercialization in West Bengal

Spice Crops:

- Cardamom, Ginger, Turmeric, Saffron, Black Pepper, etc

Plantation Crops:

- Cinchona, Tea, Coffee, Rubber, Olive etc. History of Cinchona Cultivation in India and in the world, its role in World Wars, present state in India
- Darjeeling tea, production, challenges and future scope of continuous cultivation scope of coffee production in West Bengal, present scenario and future possibilities, initiative of GTA to make a brand name “Kalimpong Coffee”
- Commercial cultivation of rubber in West Bengal, scope of processing to make finish products – scope of cultivation in West Bengal

Vegetable crops:

- Tomato, Brinjal, Bhendi, Chilli, Cucumber, Gourds, Pumpkin, Peas, Beans, Potato, tuber crops, Carrot Radish, Cauliflower, Cabbage, etc. Exotic vegetable – Broccoli, Brussels, Sprouts, Asparagus, Celery, Spinach etc

Flower Crops:

- Cymbidium and Tropical Orchids, Chrysanthemum, Marigold, Gerbera, Gladiolus, Anthurium, Carnation, Statice, etc

Medicinal Plants:

- Ipecac, Chirata, Taxus baccata, cinchona and other commercially important Medicinal plants like Ashwagandha, Sweritita chirata, Rauwolfia serpentina, Valeriana jatamansi, Ocimum sanctum, Artemisia annua, Gymnema sylvestre, Catharanthus roseus, Piper longum, Withania somnifera, Andrographis paniculata, costuss peciosus, Digitalis purpurea, Stevia, etc
- Medicinal plants grown and used in West Bengal, commercially grown and marketed medicinal plants of Bengal, list of threatened, rare and endangered medicinal plants of Bengal, scope of commercialization of medicinal plants as alternate crop in Bengal

Aromatic Plants:

- Commercially important aromatic plants notified by Govt. of India like Lemongrass, Citronella, Patchouli, Vetiver, Artemisia annua, Gerenium, Minot, Ocimum Eucalyptus, Sandalwood, Lavender, etc.commercially grown and marketed aromatic plants of Bengal, list of threatened, rare and endangered aromatic plants of Bengal, scope of commercialization of aromatic plants as alternate crop in Bengal

Ornamental gardening:

- Landscaping- design and principles
- Types of gardens
- Layout
- Garden components
- Creepers and Climbers. Cacti and succulents, hedge and edge plants
- Plants for rockery and water garden
- Flowering annuals, Indoor plants, Fardenadornaments
- Arches and pergolas
- Flowering, foliage and Avenue trees
- Arboretum
- Shrubs
- Lawn
- Grasses
- Making and maintenance
- Terrace gardening, topiary Bonsai preparation, flower arrangements, urban and Peri-urban Horticulture, Kitchen garden, aeroponics, hydroponics and Herbal garden

Organic farming:

- Definition of organic farming, scope of organic farming in Horticulture Crops, Certification procedure and inspection of organic production of Horticrops
- Scientific use of microbial inoculants in Horticrops
- Methods of application of biofertilizers. Use of microbial consortia in composting of Agri/horticultural wastes and enrichment of compost. Microbial biocontrol agents viz. pseudomonas, Bacillus, PGPR, etc. Crops suitable for organic farming
- Preparation and use of organic manures viz. Enriched compost, Vermicompost, Green manuring, Beejamrutha, Jeevamrutha, Panchagavya, Biodigester Vermi wash, Cow urine, Neem cake, BD-500, etc. Use of Bio-fertilizers viz. Rhizobium, Azotobacter, Azospirillum, phosphate solubilizers, Azolla, plant growth-promoting rhizobacteria, VAM in different Horticultural crops

Precision farming:

- Definition and implementation in Horticultural crops. Principles and practices of Integrated Farming System. Cultivation of Mushroom

Seed science and technology:

- Type of seeds concept of seed quality and factors affecting it. Role and goal of seed technology
- Generation system of seed multiplication, classes of seed. Different organization involve in seed production and certification
- Principles of seed production, seed certification, and processing. Seed testing method (Germination test, physical purity test, moisture test, TZ test, etc) principles and methods of seeds storage, IPR and its utilization, PPVR and FR technique of seed production in important vegetable (Tomato, Brinjal, onion, cucurbits, root vegetable, etc)

Soil science and agricultural chemistry:

- Importance of soil testing, soil sampling procedure for horticulture crops, and interpretation. Plants nutrients – introduction, the definition of nutrient, nutrients accumulation, nutrient uptake, and nutrient removal
- Stout criteria of essentiality
- Fertilizers – definition, the difference between organic manure and fertilizer
- Classification of fertilizer
- Problematic soil – causes and reclamation methods. Quality of irrigation water and management and integrated plant nutrient management
- Classification of essential nutrients as a primary, secondary, and micronutrient. Function and deficiency symptom of nutrient and remedial measures
- Organic matter, the importance of the organic matter, humus, types of humus and importance of humus and organic matter

Biotechnology:

- Conventional methods of crop improvement, selection, mutation, polyploidy and clonal selection
- Plant tissue culture – History, Laboratory organization, Sterilization methods, Media preparation, Plant Growth Regulators, Micro propagation, Callus culture, Cell Culture, Protoplast Culture and Fusion, Organogenesis and Somatic embryogenesis
- Genetic engineering in plants
- Isolation and characterization – drug development, Biopesticides, growth regulators, Biofertilizers
- Value addition via biotransformation. Biocatalyst, Bioremediation, Biofuels, Feedstock chemicals, Designer Chemicals. Hardening of micropropagated plants
- Application of tissue culture for crop improvement in agriculture, horticulture, and forestry. Methods for Plant Conservation, Cryopreservation, Haploid production: - Anther, Pollen, Embryo and ovule culture and their applications
- Somaclonal variation
- Production of bioactive secondary metabolites by plant tissue culture