

DIPLOMA (AGRICULTURE) – FIRST SEMESTER

First Semester			
S. No.	Name of Subject	Credits	Total Marks
1	English-I	4	100
2	Basic Botany and Introduction to Indian Agriculture	4	100
3	Agronomical Principles and Crop Production Practices (Kharif Session)	6	100
4	Farm Machinery & Post Harvesting Technology	4	100
5	Cultivation Practices of Fruits and Vegetables	3	100
6	Introduction to Horticulture Practices	3	100
Total		24	

Subject Name: ENGLISH-I

- Functional Grammar:** Patterns & Parts of speech Subject, Predicate, Noun, Pronoun, Adjective, Adverb, Verb, Verb phrases, Conjunction, Interjection.
- Vocabulary:** Word formation, Prefix, Suffix, Compound words, Conversion, Synonyms, Antonyms, Homophones and Homonyms, How to look up a dictionary.
- Communication:** Meaning & importance of communication, Barriers to effective communication, Channels of communication, Language as a tool of communication.
- Requisites of Sentence writing:** Fragmented sentences, A good sentence, expletives, Garbled sentences, Rambling sentences, Loaded sentences, Parallel Comparison, Squinting construction, Loose & periodic sentences.

Suggested Reading

- Modern English Grammar by N.Krishnaswamy (Maemilan)
- Spoken English for India by Bansal & Harrison
- Developing Programmes and Materials for Language Learning by FraidaDubin& Elite Olshtain
- Communicative Approach to Language Teaching by David H. Wyatt • “Communication skills for Technical students” Compiled by CDC, TTI, Bhopal. Published by Somaiya Publications Pvt. Ltd. 4th Revised Edition, July, 1995.
- Greenbaum Sidney, Oxford English Grammar, New Delhi, Oxford University Press. Peregoy, 2009.

Subject Name: BASIC BOTANY AND INTRODUCTION TO INDIAN AGRICULTURE

- Introduction to Botany and General Classification of plants.
- Parts of a typical flowering plant.

3. Morphology of root, stem, leaf and flower.
4. Structure and types of plant tissues.
5. Internal structure of of Dicot and Monocot Stems, Roots and typical Leaf.
6. Significance of life cycle with Special reference to alteration of generations in Chlamydomonas, Rhizopus, Funaria, Adiantum, Pinus, and a flowering plant.
7. Importance of agriculture and its products in Indian economy.
8. Major Crops of India and their distribution viz. food grains, pulses, oil seed crops, cotton, fibre crop, sugarcane etc.
9. Farming systems/types of Farming.
10. Recent trends in Agriculture.

Practical

1. Morphological studies of roots, stems, leaves and flowers
2. To study about Parts of a typical flowering plant
3. Study of different crops and food grains
4. Study of different geographical distribution of different crops
5. Practical knowledge about farm practices
6. Acquittance with different agricultural resolution viz., Green, White, Yellow, Blue and golden revolution.

Suggested Reading

V.K. Jain	:	Fundamentals of Plant Physiology
V.Verma	:	TextBook of Plant Physiology
H.N Srivastav	:	Plant Phsiology
N.C.R.T. Class 11th and 12th		Biology

Subject Name: AGRONOMICAL PRINCIPLES AND CROP PRODUCTION PRACTICES (KHARIF SESSION)

1. Crops and their economic importance
2. Cropping systems and copping seasons in India
3. Crop Production Practices: Pre and Post sowing harvesting, storage etc.
4. Factors Affecting Crop Production
5. Origin, geographic distribution, economic importance, soil and climatic requirements, varieties, cultural practices and yield of Kharif crops
6. Cereals-rice, maize, sorghum, pearl millet and minor millets
7. Pulses, pigeon pea, mungbean and urdbean
8. Oilseeds: groundnuts, sesame and soyabean
9. Fibre crps:cotton , jute, and sun hemp
10. Forage crops: sorghum, maize, cowpea, cluster bean and napier

Practicals

1. To gain knowledge on seed bed preparation and sowing
2. To learn how to prepare herbarium.
3. Identification of weeds

4. Identification of seeds and varieties of major kharif crops
5. Seed treatment of different kharif crops
6. Preparation of different methods of rice nursery
7. Study of different land configuration techniques
8. Practice of different methods of sowing of kharif crops
9. Visit/Preparation to crop cafeteria and record growth and yield attributing observations of kharif crops

Suggested Reading

P.A.U. Bulletin: Package of practices for Kharif Crps. Chhidda Singh, Prem Singh &

Rajbir Singh: Modern techniques of raising field Crops.

Reddy S. R Crops: Agronomy of Field

Subject Name: FARM MACHINERY & POST HARVESTING TECHNOLOGY

1. Common farm machines and implements of operation, adjustments, calibration
2. Principles, advantages and limitations of farm machines and implements- plough, narrow, Water pumps, cultivator, tractor, thresher, winnower, plant protection equipment
3. Repair and maintenance of plant protection equipment's (Knapsack sprayer, fogging machines , seed treating drums, power sprayer, food sprayer,) harrow, cultivator, thresher
4. Workshop tools and method, including weiding, metal and wood fabrication tools, tool, sharpening and threadings
5. Importance of post-Harvest Operations
6. Post Harvest losses in different farm produce
7. Cleaning, grading, and drying of farm produce
8. Farm storage structures and storage of farm produce
9. Principles of processing of farm produce
10. Types of market, Function , Structure and operation of market
11. Marketing information and survey
12. Cooperative Marketing Federation, their operations and functions Packaging and transportation of farm produce

Practical

1. Learn about Farm machineries and their use.
2. Learn about repair and maintaince of plant protection equipment.
3. Learn about handling of harvesting and post harvesting farm machines
4. Learn about farm machineries used for seed treatment and dormancy breaking.
5. Study of different cleaner
6. Study of different shellers
7. Study of different graders
8. Study of different threshers
9. Visit to agricultural product processing industries

Suggested Reading

- Kepner, R. A., Bainer, R. and Berger, E.L 1987.Principles of Farm Machinery, C. B.S Publishers and Distributors, New Delhi
- Smith, H.P and Wilkes, L.H. 1979.Farm Machinery and Equipment, Tata McGraw-Hill Publishing Co.ltd, New Delhi.

Subject Name: CULTIVATION PRACTICES OF FRUITS AND VEGETABLES

1. Importance- production and productivity-commercial importance- classification of fruits
2. Origin, geographical distribution, economic importance, soil and climate requirements, varieties ,cultural practices and yield of commercial crop- Mango, Banana, Grapes, Citrus
3. Major temperate fruits-apple- pear- peach- plum- apricot etc –varietiespropagation and planting.
4. Orchard management
5. Important vegetable crops- production- productivity and distribution- nutritive value of vegetables- economic importance and scope of vegetable crops and Classification of vegetables.
6. Types of vegetable gardens- nutrition garden- vegetable forcing- hydroponicsaerponics-river bed system- terrace garden
7. Origin, geographical distribution, economic importance, soil and climate requirements varieties ,cultural practices and yield of commercial vegetables crop – Major solanaceous vegetables
8. Cucurbitaceous vegetables- and leguminous vegetables
9. Leafy vegetables and tubers vegetables

Practical

1. Nursery bed and Main field preparation and planting of various vegetable crops.
2. Layout of nutrition garden and preparation of crop calendar
3. Cultivation of vegetables.
4. Calculation of fertilizer requirement- application by different methods- after care and management of crops
5. Visit to the farmer's fields in the vegetable growing areas
6. Propagation of fruit crops-cutting- layering- budding- grafting.
7. Field management in banana including planting- manuring- propping- identification of pest and diseases and their control
8. Orchard management

Subject Name: INTRODUCTION TO HORTICULTURE PRACTICES

1. Definition and importance of horticulture- importance of horticultural crops to the state and country.
2. Classification of horticultural crops
3. Phases of growth and development of horticultural crops.
4. Flowering and fruiting habits- Factors associated with flowering and fruit set. Fruit development – fruit drop factors and control measures
5. Plant growth regulators – role in horticultural crops – preparation and method of application. Biofertilizer and mulching.
6. Orchard lay out and types of planting systems.
7. Propagation of plants- Plant propagation –types of propagation – advantages and disadvantages of different methods- potting media preparation
8. Training and Pruning in orchards
9. Components of Nursery - nursery plants - production unit -sales unit - display area -nursery management
10. Plant propagating structures –green house – mist chamber
11. Tools and equipments used in horticulture

Practical

1. Identification of horticultural crops.
2. Visit to commercial orchard.
3. Preparing orchard lay out
4. Training and pruning of horticultural crops.

5. Familiarization of components of nursery-nursery structure -hardening units.
6. Preparation of potting mixture and potting in different containers/polybags.
7. Plant propagation- seeds-pre sowing treatments –sowing-irrigation
8. Plant propagation- cutting- layering- budding- grafting.
9. Visit to horticultural nursery
10. Tools and equipments used in horticulture farm