

**Theory**

Agronomy and its scope, seeds and sowing, tillage, land configuration and sub soiling, crop density and geometry, Crop nutrition, manures and fertilizers, nutrient use efficiency. Growth and development of crops. Agro-climatic zones of India and Gujarat. Classification of field crops and Factors affecting on crop production. Drought – definition – types of drought – effect of drought on crops – management of drought. Cropping systems – monocropping – definition and principles of crop rotation – mixed cropping – intercropping – relay cropping – multistoried cropping – sole cropping. Soil fertility and soil productivity – fertility losses – maintenance of soil fertility – soil organic matter Irrigation – Introduction, Importance, Definition and Objectives. Physical classification and Biological classification of water. Irrigation efficiency and water use efficiency, conjunctive use of water, Approaches for scheduling of irrigation; Methods of irrigation including micro irrigation system. Quality of irrigation water, water logging. Weeds: definition, classification and characteristics

**Practical:**

1. Identification of crops, seeds, fertilizers, pesticides and tillage implements,
2. Lay out and types of seed bed preparation.
3. Practice of different methods of sowing
4. Study of yield contributing characters and yield estimation of major crops,
5. Seed germination and viability test,
5. Numerical exercises on plant population and seed rate.
6. Use of tillage implements-reversible plough, one way plough, harrow, leveler,
7. Study of sowing implements/equipment.
8. Measurement of field capacity, bulk density and infiltration rate
9. Field layout of various irrigation methods
10. To work out the labour unit and unit of work for various field operations