

**SYLLABUS FOR WRITTEN EXAMINATION OF AGRICULTURAL ENGINEERING:**

1. Compulsory Paper	(i) General English	Maximum marks = 100
	(ii) General Knowledge	Maximum marks = 100
2. Technical Paper	Agricultural Engg.	Maximum marks = 200
3. Interview/Personality test		Maximum marks = 50

**SYLLABUS**

**GENERAL ENGLISH:**

**Syllabus:-**

The questions will be designed to test their standard of English Grammar and Comprehension of language. The paper in English will consist of Comprehensive questions (Conventional essay type) including Objective type question carrying 1 to 15 marks of matriculation standard.

**GENERAL KNOWLEDGE:**

**Syllabus:-**

The General Knowledge will include current event and of such matters of every day observations and experiences in the area of scientific aspect as may be expected from a educated person who has not made an special study of any scientific subject. The paper will also include question of History of India and Geography of Nature which candidates should be able to answer without any special study. Certain questions will be based on analytical ability. The papers in General Knowledge will consist of Objective type questions only.

**AGRICULTURAL ENGINEERING (SECTION-A)**

**1. Soil and water conservation:** Definition and scope of soil conservation; Mechanics and types of erosion, their causes Hydrologic cycle rainfall and run off-factors affecting them and their measurements; stream gauging-evaluation of run off from rainfall; Erosion control measure-biological and engineering.

**Basic open channel hydraulic:** Design of soil conservation structure-terraces, bunds, outlets and grassed waterways. Principles of flood control. Flood routing. Design of farm ponds and earth dams. Stream bank erosion and its control. Wind erosion and its control. Principles of watershed management. Investigation and planning in river valley projects.

2. **Irrigation and drainage:** Soil water-plant relationship, sources and types of irrigation. Planning and design of minor irrigation projects. Techniques of measuring soil moistures.

**Duty of water-consumptive use.** Water requirements of crops. Measurement and cost of irrigation water. Measuring devices. Flow through orifices, Weirs and flumes. Levelling and layout of irrigation systems. Design and construction of channels, Field channel, Pipelines, Head gates, Diversion boxes structures and road crossing, Occurrence of ground water, Hydraulics of wells, Types of wells, their construction, Drilling methods, Well development, Testing of wells.

**Drainage:** Definition causes of water logging. Methods of drainage. Drainage of irrigate lands. Design of surface and sub-surface systems.

3. **Building materials:** Kinds of building materials their properties- Timber, Brickworks and RC construction, Design of columns, Beams, roof trusses, Joints. Layout of a farm-stread. Design of farm houses, Animals shelters and storage structures. Rural water supply and sanitation.

#### **AGRICULTURAL ENGINEERING (SECTION-B)**

4. **Farm power and machinery:** Construction of different types of internal combustion engines. Ignition, fuel lubrication, cooling and governing systems of IC engines. Different types of tractors. Chassis transmission and steering. Farm machinery for primary and secondary tillage, seeding machinery for primary and secondary tillage, seeding machinery interculture tools and machinery. Plant protection equipment. Harvesting and threshing equipment. Machinery for land development. Pumps and pumping machinery.

5. **Electricity and Rural Electrification:** Power generation and transmission; Distribution of electricity for rural electrification.; A.C and D.C. circuits.

Uses of electric energy on the farm, Electric motors used in agriculture-types, selection, installation and maintenance.

#### **GENERAL INSTRUCTION:**

1. All question papers must be answered in English, Candidates may be permitted to use battery-operated calculators for the optional subject only.
2. Commission has discretion to fix qualifying marks in any or all the subject of the examination.