Kerala Agricultural University

KELAPPAJI COLLEGE OF AGRICULTURAL ENGG. & FOOD TECHNOLOGY

I Semester B. Tech. (Agrl. Engg.)- Final Examination, February 2026

Crop Production and Protection Technologies (3+1)

BES 1101

Marks: 50

Time: 2 hours

I Answer the following **(10×1 marks = 10 marks)**

1. At field capacity, the water potential value is _____.
2. De-nitrification equation
3. Concept of essentiality criteria of plant nutrients given by _____
4. Expand and location - IARI
5. The term Agronomy is derived from _____
6. Define permananet wilting point
7. Net cultivated land in India in _____ m ha.
8. Average annual rainfall of India _____ mm.
9. Mention the critical stages of irrigation for any two crops
10. If C:N ratio is narrow nutrient _____ occurs

II Write short notes on any *FIVE* of the following **(5×2 marks = 10 marks)**

1. Write the deficiency symptoms of phosphorous and sulphur
2. Explain different methods of fertilizer application
3. Why is evapotranspiration referred to as a necessary evil justify.
4. Why vertisols are called self-tilled soils justify.
5. Explain the factors affecting crop growth and development
6. What is sustainable agriculture and explain the pillars of sustainability.
7. Define pruning and training with two advantages each.

III Write any *FIVE* of the following **(5×4 marks = 20 marks)**

1. What is soil organic matter? Explain its role in soil fertility and discuss the factors affecting its decomposition.
2. Define Organic Farming. Explain the basic principles of organic farming as proposed by IFOAM.
3. Give a detailed explanation on horticultural crops pests and diseases in Kerala, along with their nature of damage or symptoms.
4. USDA classification of soil order and give a short description of Vertisols.
5. What is essentiality criteria of nutrients? List essential nutrients and mention the function of nitrogen nutrient in plant growth and development
6. What is a cropping system? Explain its classification
7. Define weed? Explain different methods of weed management

IV Write essay on any *ONE* of the following **(1×10 marks = 10 marks)**

1. Explain how quality water plays role in healthy plants production and describe the methods used to test irrigation water quality. Reclamation of acidic and sodic soils.
2. What is tillage, types of tillage? Explain the advantages and disadvantages of tillage in crop production.