Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 150003

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2025
Third Semester
Agricultural Engineering
U23AG303 – PRINCIPLES AND PRACTICES OF CROP PRODUCTION
(Regulation 2023)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Differentiate between primary and secondary tillage with one example each.	2	K2	CO1
2.	How do soil texture and structure influence tillage operations?	2	K2	CO1
3.	Justify why Tamil Nadu has multiple cropping patterns despite limited rainfall.	2	K2	CO2
4.	Distinguish between mono-cropping and inter-cropping with one advantage each.	2	K2	CO2
5.	Suggest two integrated approaches to control nematodes in crop fields.	2	K2	CO3
6.	Why is conjunctive use of organic and inorganic fertilizers recommended?	2	K2	CO3
7.	Explain the importance of SRI cultivation	2	K2	CO4
8.	Give two reasons why pulses are often included in crop rotations.	2	K2	CO4
9.	Mention two advantages of drip irrigation in fruit crops.	2	K2	CO5
10.	What are the benefits of using polyhouse technology in vegetable cultivation?	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	Analyze the role of tillage in soil health and crop productivity, and suggest suitable implements for different soil types.	13	K1	CO1

		(OR)			
	b)	Evaluate the advantages and disadvantages of conservation tillage systems compared to conventional tillage.	13	K1	CO1
12.	a)	Examine how agro-climatic zoning influences crop selection and cropping systems in India. Support with relevant examples.	13	K2	CO2
		(OR)			
	b)	Design a suitable cropping pattern for dryland agriculture in Tamil Nadu, considering rainfall distribution and soil type.	13	K2	CO2
13.	a)	Critically discuss the role of Integrated Nutrient Management (INM) in sustainable agriculture with examples.	13	K3	CO3
		(OR)			
	b)	Develop an integrated pest and disease management plan for rice cultivation.	13	K3	CO3
14.	a)	Evaluate the package of practices for sugarcane cultivation and suggest improvements for enhancing productivity.	13	K3	CO4
		(OR)			
	b)	Analyze the comparative production constraints of pulses and oilseeds in India and propose solutions.	13	K3	CO4
15.	a)	Discuss the economic feasibility and constraints of protected cultivation in horticultural crops.	13	K2	CO5
		(OR)			
	b)	Prepare a detailed cultivation plan for mango/banana under tropical conditions, highlighting critical management practices.	13	K2	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	As an agricultural consultant, you are advising a farmer owning 5 acres of semi-arid land. Develop a comprehensive crop production plan that integrates tillage, crop choice, irrigation scheduling, nutrient management, and pest control strategies. Justify your plan with scientific reasoning.	15	K3	CO3
		(OR)			
	b)	A commercial horticulture enterprise is planning to establish a protected cultivation unit (polyhouse) for high-value vegetable and flower crops. Prepare a detailed case study covering site selection, structural design, crop choice, management practices, cost–benefit analysis, and sustainability aspects.	15	K2	CO5