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PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations - March 2026

Date: 12-03-2026

Time: 02:00pm - 03:30pm

School: SOCSE	Program: All programs in SoCSE		
Course Code: ECE3097	Course Name: Smart Electronics in Agriculture		
Semester: VI	Max Marks: 50	Weightage: 25%	

CO - Levels	C01	C02	C03	C04	C05
Marks	16	17	17	-	-

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.

5Q x 2M=10M

1	Define Traditional Agriculture.	2 Marks	L1	C01
2	What is the difference between intercropping and polyculture?	2 Marks	L1	C01
3	List any three core principles of Conservation Agriculture.	2 Marks	L1	C01
4	State the advantages of Edge computing over cloud computing in agriculture.	2 Marks	L1	C02
5	Define Actuator	2 Marks	L1	C03

Part B

Answer the Questions.

Total Marks 40M

6.	a.	Describe "The Three Sisters" polyculture system. Explain how each crop plays a complementary role in this system.	10 Marks	L2	CO1
Or					
7.	a.	Explain Smart Irrigation Systems as a modern agricultural technology. Discuss the technologies involved and analyze the benefits in terms of water savings, crop productivity and environmental protection.	10 Marks	L2	CO1

8.	a.	What is IoT framework? Explain its importance in real-time agricultural systems	15 Marks	L2	CO2
Or					
9.	a.	Explain Climate-Smart Agriculture mitigation strategies. Discuss conservation agriculture, precision management, improved livestock practices, agroforestry, renewable energy adoption and tillage management.	15 Marks	L2	CO2

10.	a.	Describe the need for the power management subsystem in agriculture and explain the components of the power systems.	5 Marks	L3	CO3
	b.	With neat diagrams, explain the construction and working of a MLX90614 Infrared Temperature Sensor for crop health monitoring.	10 Marks	L2	CO3
Or					
11.	a.	Explain how temperature extremes affect electronic systems, and describe the solutions implemented to address this challenge.	5 Marks	L3	CO3
	b.	With neat diagrams, explain the construction and working of a BME280 environmental sensor that can be used in a greenhouse climate control system.	10 Marks	L2	CO3