

Register No : _____

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Fifth/Sixth Semester

Agricultural Engineering

AI3022 - Automation in Agriculture

Regulations - 2021

Duration : 3 Hrs

Maximum : 100 Marks

PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	List some applications of zener diode.	RE	1	2
2.	Name any 4 types of analog to digital convertor.	RE	1	2
3.	What are the challenges in precision farming.	RE	2	2
4.	Define differential GPS.	RE	2	2
5.	What is a robot?	RE	3	2
6.	What is the future of the robotics?	UN	3	2
7.	Classify different types of sensor.	UN	4	2
8.	Differentiate between Arduino and Raspberry Pi	UN	4	2
9.	Outline the characteristics of IoT.	UN	5	2
10.	Define Drone.	RE	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Explain the construction and working of BJT. Or	UN	1	13
	b i Explain the different types of logic gates and truth table.	UN	1	6
	ii Outline, how can microprocessors effectively manage multiple ADC and DAC channels for complex data acquisition systems?	UN	1	7
12.	a i Distinguish active remote sensing system and passive remote sensing system with examples.	AN	2	6
	ii Examine the importance of GIS in planning.	AN	2	7
	Or			
	b i List out GPS augmentation system and mention the importance of those systems.	AN	2	6
	ii Analyze yield mapping system.	AN	2	7

13.	a	i	How can agricultural robots enhance crop yields and reduce labor costs? Explain.	AP	3	6
		ii	List the different types of agricultural robots. Explain the function of any one type of agricultural robots.	AP	3	7
Or						
	b	i	What are the next big innovations expected in agricultural robotics?	AP	3	6
		ii	How might these developments change the landscape of farming in the coming years?	AP	3	7
14.	a	i	How do soil moisture sensors, temperature sensors, and nutrient sensors each contribute to crop management?	AP	4	6
		ii	Illustrate in what ways data from water level depth detectors be integrated with other agricultural technologies.	AP	4	7
	Or					
	b	i	How can the integration of Raspberry Pi and Arduino with IoT improve farm management? Explain.	UN	4	6
		ii	What are the challenges of implementing Raspberry Pi and Arduino systems in agricultural settings?	UN	4	7
15.	a	i	Explain in detail how does IoT facilitate real-time data collection and analysis in farming?	UN	5	7
		ii	Demonstrate a smart irrigation system.	UN	5	6
	Or					
	b		Explain the economic implications of adopting drone technology in agriculture.	UN	5	13

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>	<i>Questions</i>			<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	i	Explain the steps involved in the design of a band pass filter using OPAMP.	UN	1	8
		ii	Explain the operation of analog to digital converter.	UN	1	7
	Or					
	b	i	Explain the primary objectives of automating greenhouse/farm operations?	UN	5	8
		ii	Classify and explain about Drones in India.	UN	5	7