Model Question Paper -2

USN | | | | | | | | | | |

Third Semester B.E. Degree Examination

Introduction to Drone Technology

TIME: 03 Hours **Max. Marks: 100**

Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.

		Module – 1	Marks	Bloom's Taxonomy Levl	Co's
Q.1	(a)	Classify and explain about Drones in India	10	L2	CO1
	(b)	Explain Generic UAV systems with a neat sketch	10	L2	CO1
		OR			
Q.2	(a)	Explain about Degrees of freedom and Stick movements	10	L2	CO2
	(b)	Explain about USV with neat sketch and its advantages and disadvantages	10	L2	CO2
		Module – 2			
Q.3	(a)	Explain about the Pre-Flight checks for drones.	10	L2	CO1
	(b)	Write a program for Arduino flame sensor	10	L1	CO2
		OR			
Q.4	(a)	Write a program to Servo motor and Stepper motor control with Arduino	10	L1	CO2
	(b)	Distinguish between microcontroller and microprocessor	10	L2	CO2
		Module – 3			
Q.5	(a)	Explain in detail about Drone Licensing requirements procedure.	10	L2	CO4
	(b)	Explain in detail about NPNT Compliance	10	L2	CO4

OR			Marks	Bloom's Taxonomy Levl	Co's
Q.6	(a)	Explain about certification types and schemes.	10	L2	CO4
	(b)	Explain about DGCA Rules and Regulation for Drones in India.	10	L2	CO4
Module – 4					
Q.7	(a)	Develop an equation for thrust generation for an UAV.	10	L6	CO3
	(b)	Explain about different types of payloads for UAV	5	L2	CO3
	(C)	Explain Maneuver load diagram	5	L2	CO3
OR					
Q.8	(a)	Explain about Solar cell with neat sketch.	10	L2	CO3
	(b)	Explain about Hybrid Propulsions performance characteristics in drones	10	L2	CO3
Module – 5					
Q.9	(a)	Explain about detailed Drone Repair Checklist for drones	10	L2	CO5
	(b)	Explain about Tuning rules and procedure for drones.	10	L2	CO5
OR					
Q.10	(a)	CASE STUDIES: Explain any one detailed Construction and testing from below case studies. 1. Agriculture purpose for drones with suitable diagram and program. 2. Firefighting purpose for drones with suitable diagram and program.	20	L3	CO5

Model Question Paper -1

USN | | | | | | | | | | |

Third Semester B.E. Degree Examination

Introduction to Drone Technology

TIME: 03 Hours **Max. Marks: 100**

Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.

		Module – 1	Marks
Q.1	**(a)**	Classify and explain the UAV based on range, altitude, and size.	10
	(b)	Explain Longitudinal, Lateral, and dynamic stability with neat sketches.	10
		OR	
Q.2	**(a)**	Explain in detail about the Nano drones with neat sketch and its Advantages and disadvantages	10
	(b)	Write short notes on i) Hovering ii) Climbing iii) Descent iv) yaw	10
		Module – 2	
Q.3	**(a)**	Explain about basics components of drones with neat sketch.	10
	(b)	List out the Arduino sensors and explain about Digital Barometric pressure sensor and smoke gas sensor.	10
		OR	
Q.4	**(a)**	Classification of Telemetry system and explain about wireless telemetry with neat block diagram and its applications	10
	(b)	Explain about Flight planning and Mission planning for drones	10
		Module – 3	
Q.5	**(a)**	Explain about DGCA Rules and Regulation for Drones in India.	10
	(b)	Explain in detail about Pilot Licensing requirements procedure.	10

		OR	Marks
Q.6	(a)	Classify and explain about certifications process.	10
	(b)	Explain in detail about NPNT Compliance	10
		Module – 4	
Q.7	(a)	Explain the composite structures using in UAV and explain their manufacturing techniques.	10
	(b)	Explain about Payload configurations for drones	10
		OR	
Q.8	(a)	Explain about the launching methods and recovery methods used in UAV	10
	(b)	Explain about stepped piston engine with neat sketch.	10
		Module – 5	
Q.9	(a)	Explain about Testing procedure for drones.	10
	(b)	Explain about Manufacturing constraints and Applications for drones.	10
		OR	
Q.10	(a)	CASE STUDIES: Explain detailed Construction and testing of a basic drone.	20