

# CBCS SCHEME

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BAE654C

**Sixth Semester B.E./B.Tech. Degree Examination, June/July 2025**

## Introduction to UAV

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.*

*2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Classify and explain about drones in India.	10	L2	CO1
	b.	Illustrate the components of a generic UAV system with a labeled sketch and explain how can these components be applied in real world drone operations.	10	L2	CO1
OR					
Q.2	a.	Demonstrate the six degrees of freedom in drones and explain the influence of stick movements or a remote controller in controlling the drone's flight dynamics.	10	L2	CO1
	b.	Illustrate a USV (Unmanned Surface Vehicle) with a neat sketch and explain its components, along with its advantages and disadvantages in real world.	10	L2	CO1
Module – 2					
Q.3	a.	Explain the process of pre-flight checks and mission planning for drones, and analyze their importance in ensuring safe and efficient flight operations.	10	L2	CO2
	b.	Explain the basic components of the fixed wing drone with neat sketch.	10	L2	CO2
OR					
Q.4	a.	Explain the working of an arduino sensor and analyze its advantages and disadvantages in real world.	10	L2	CO2
	b.	Compare microcontrollers and microprocessor used in UAV's highlighting their key differences and roles in drone operations.	10	L2	CO2
Module – 3					
Q.5	a.	Explain the procedure and requirements for obtaining a drone license in detail.	10	L2	CO3
	b.	How can drone operators ensure compliance with NPNT ( No permission No Takeoff) regulations and what steps are involved in the implementation process.	10	L2	CO3
OR					
Q.6	a.	Summarize about certification types and schemes in drone rules and regulations.	10	L2	CO3
	b.	Interpret about DGCA rules and regulations for drones in India.	10	L2	CO4
Module – 4					
Q.7	a.	Describe the design requirements for a small category drone in detail.	10	L2	CO4
	b.	Discuss in detail the different types of payload configurations for UAV.	10	L2	CO4
1 of 2					

OR

Q.8	a.	Describe the characteristics and types of Batteries used in UAV.	10	L2	CO4
	b.	Explain the working principle of solar powered UAV with neat sketch.	10	L2	CO4

## Module – 5

Q.9	a.	Describe the importance of simulator training for operating drones and various level of training.	10	L2	CO4
	b.	Exemplify about tuning of drones and calibrating procedure of UAVs.	10	L2	CO4

OR

Q.10	a.	Elaborate the details of drone repair and list out the check lists for drones.	10	L2	CO4
	b.	Explain in detail about one case study of any one real time applications.	10	L2	CO4

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