

CBCS SCHEME

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BAE654C

Sixth Semester B.E./B.Tech. Degree Examination, June / July 2026**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.	Define UAV and explain its classification based on size with suitable example.	10	L2	CO1
	b.	Enumerate the evolution of UAV from early remotely piloted vehicles to modern autonomous systems.	10	L2	CO1
OR					
Q.2	a.	Discuss the degrees of freedom of UAV and explain the different maneuvers in flight operation.	10	L2	CO1
	b.	Explain the UAVs stick movements and its flight dynamics.	10	L2	CO1
Module – 2					
Q.3	a.	Describe the major hardware components of a UAV and its functions.	10	L2	CO2
	b.	Interpret the process of pre – flight checks and flight planning required before UAV operations.	10	L2	CO2
OR					
Q.4	a.	Discuss the role of Arduino – based sensors and flight controllers in autonomous drone operation.	10	L2	CO2
	b.	Explain how telemetry supports mission planning and data transmission.	10	L2	CO4
Module – 3					
Q.5	a.	Summarize the DGCA rules and regulations governing UAV operation in India.	10	L2	CO4
	b.	Explain the NPNT (No permission – No take off) compliance and its importance in UAV safety.	10	L2	CO4
OR					
Q.6	a.	Describe the process of UAV certification and pilot licensing requirements under Indian regulations.	10	L2	CO4
	b.	Discuss how airworthiness standards ensure UAV reliability and operational safety.	10	L2	CO4

Module – 4

Q.7	a.	Enumerate the different UAV structural configurations and discuss factors influencing payload design.	10	L2	CO3
	b.	Compare various propulsion systems used in UAVs – electric, hybrid and internal combustion.	10	L2	CO3

OR

Q.8	a.	Describe the working principles of mini – turbine propulsion and its advantages in high – speed UAVs.	10	L2	CO3
	b.	Discuss the influence of structural design on UAV stability and endurance.	10	L2	CO3

Module – 5

Q.9	a.	Interpret the tuning and testing procedures followed before UAV flight operations.	10	L2	CO4
	b.	Discuss manufacturing constraints commonly encountered in UAV.	10	L2	CO4

OR

Q.10	a.	Explain the role of simulator training in UAV pilot proficiency and mission planning	10	L2	CO4
	b.	Illustrate a case study on the construction and testing of a basic drone, highlighting key design and performance outcomes.	10	L2	CO4
