

USN

--	--	--	--	--	--	--	--	--	--

BAE/BAS714C

Seventh Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026 Flight Testing

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.	Summarize the methods of reducing data uncertainty in flight test data.	10	L2	CO1
	b.	With a block diagram, write about the onboard and ground based data acquisition system.	10	L2	CO1
OR					
Q.2	a.	Outline the purpose and scope of flight testing and also list types of flight testing.	10	L2	CO1
	b.	Explain the sequence and planning involved in flight testing.	10	L2	CO1
Module – 2					
Q.3	a.	Describe about the range estimation for a propeller aircraft.	10	L3	CO2
	b.	Explain in detail about the In-flight calibration methods.	10	L2	CO2
OR					
Q.4	a.	Discuss the takeoff and landing procedures in detail.	10	L3	CO2
	b.	Explain the flight testing and data reduction methods for level turn performance.	10	L2	CO2
Module – 3					
Q.5	a.	Illustrate the significance of the stick-free method in determining static longitudinal stability.	10	L3	CO2
	b.	Outline the concept of flight path stability and illustrate it using a suitable graph.	10	L2	CO2
OR					
Q.6	a.	Identify and discuss the key flight testing methods required to assess maneuvering stability during flight testing.	10	L3	CO2
	b.	With a neat graph, explain the data reduction techniques for maneuvering stability.	10	L2	CO2

Module – 4

Q.7	a.	Explain in detail about adverse yaw effects and mention the testing methods.	10	L2	CO2
	b.	Write with necessary equations for the coupling between rolling and yawing moments.	10	L2	CO2

OR

Q.8	a.	Explain in detail about the aileron reversal and mention the testing methods.	8	L2	CO2
	b.	Write short notes on steady heading side slip.	8	L2	CO2
	c.	Define lateral and roll stability.	4	L1	CO2

Module – 5

Q.9	a.	Summarize the major phases of a spin and outline the techniques used for its recovery.	10	L2	CO3
	b.	Explain the flight test method for stall testing and data requirement.	10	L2	CO3

OR

Q.10	a.	Infer pilot responses using the Cooper-Harper scale to understand the aircraft flying qualities.	12	L3	CO3
	b.	Describe various potential problems encountered during stall testing.	8	L3	CO3
