CBCS SCHEME

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BAE714A

Seventh Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
Gas Turbine Technology

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.	Explain the working principle of turbojet engine with the help of neat sketch. Write their characteristics, advantages and disadvantages.	10	L2	CO1
	b.	Explain the difference between turbojet and turboprop engines. Draw the energy distribution of turboprop engine with the help of neat sketch.	10	L2	CO1
		OR			
Q.2	a.	Enumerate the various types of burners with their merits and demerits. Why after burners are used? Explain.	8	L2	CO1
	b.	Explain with neat sketch, different types of thrust reversers.	8	L2	CO1
	c.	Describe the sound suppression (reduction) techniques in the aircraft engine.	4	L2	CO1
		Module – 2			
Q.3	a.	Elaborate on the characteristics that must be considered in the selection of material in the gas turbine engine of aircraft.	10	L2	CO2
	b.	Elucidate any five types of surface finishing in materials and manufacturing.	10	L2	CO2
		OR			
Q.4	a.	With a neat sketch explain the working of a general FADEC system interface with engine.	10	L2	CO2
	b.	Explicate the typical fuel system and components for general electric CJ610 engine.	10	L2	CO2
		Module – 3			
Q.5	a.	Discuss about the design and off design performance of a gas turbine engine. And explain the different parameters in design point performance.	10	L2	CO3
	b.	Explain the steps involved in starting of gas turbine engine.	10	L2	CO3

		OR			
Q.6	**a.**	Define wind milling and describe the process of wind milling in a turbo jet engine.	**10**	**L2**	**CO3**
	b.	Explain transient working lines for acceleration and deceleration with relevant sketches.	**10**	**L2**	**CO3**
		Module – 4			
Q.7	**a.**	Write short notes on : i. Surge margin requirements ii. Surge margin stack-up.	**10**	**L2**	**CO3**
	b.	Explain the combustor rig test.	**10**	**L2**	**CO4**
		OR			
Q.8	**a.**	Explain the turbine testing and performance evaluation.	**6**	**L2**	**CO4**
	b.	Explain the testing of inlet distortion with gas turbine engine and surge test.	**6**	**L2**	**CO4**
	c.	Draw neat sketch and explain turbine map.	**8**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	Describe the various preliminary flights rating test.	**10**	**L2**	**CO5**
	b.	Explain the following engine test : i. Qualification Test (QT) ii. Acceptance Test (AT) iii. Durability and Life Assessment Test.	**10**	**L2**	**CO5**
		OR			
Q.10	**a.**	Briefly explain the instruments used : i. Pressure Measurements ii. Temperature Measurements.	**10**	**L2**	**CO5**
	b.	Explain a typical data acquisition system.	**10**	**L2**	**CO5**

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