

**Model Question Paper-1 with effect from 2022-23 (CBCS Scheme)**

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**Sixth Semester B.E. Degree Examination**  
**FLIGHT VEHICLE DESIGN**

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

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

<b>Module -1</b>			<b>*Bloom's Taxonomy Level</b>	<b>Marks</b>
Q.01	a	Explain about the conceptual design phase of an aircraft	L2	10
	b	Write a short note about the aircraft mission requirements with simple sketch	L4	10
<b>OR</b>				
Q.02	a	Estimate the takeoff weight buildup of an aircraft	L3	10
	b	Explain in detail about thrust matching	L2	10
<b>Module-2</b>				
Q. 03	a	Briefly describe the active and passive lift enhancement approaches	L3	10
	b	Write a typical spread sheet for vertical tail stabilizer sizing	L4	10
<b>OR</b>				
Q.04	a	Explain conic lofting procedure with neat sketch	L3	10
	b	Briefly describe about the v-n diagram	L2	10
<b>Module-3</b>				
Q. 05	a	Explain about the rubber engine sizing and fixed engine sizing	L3	10
	b	Describe the installed thrust correction for turbojet engine with neat graph	L2	10
<b>OR</b>				
Q. 06	a	Derive an expression for landing ground roll distance	L2	10
	b	Explain the spread sheet structure for turbojet engine sizing	L4	10
<b>Module-4</b>				
Q. 07	a	Explain Cooper-Harper rating scale	L3	10
	b	Explain longitudinal static stability with sketch	L3	10
<b>OR</b>				
Q. 08	a	Explain the criteria for rudder area sizing	L4	10
	b	Explain lateral directional stability of an aircraft with neat sketch	L3	10
<b>Module-5</b>				
Q. 09	a	Describe the following i) Air pressurization ii) Air conditioning	L4	10
	b	Explain the characteristic of fuel system of an aircraft	L3	10
<b>OR</b>				
Q. 10	a	Discuss about the material selection criteria for an aircraft	L2	10
	b	Explain the working principle of hydraulic system	L1	10

\*Bloom's Taxonomy Level: Indicate as L1, L2, L3, L4, etc. It is also desirable to indicate the COs and POs to be attained by every bit of questions.