

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

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Fourth Semester B.E. Degree Examination Aircraft Systems and Avionics

TIME: 03 Hours

Max. Marks: 100

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

Module -1			*Bloom's Taxonomy Level	Marks
Q.01	a	Distinguish the modern control systems and the conventional systems that are used in the aircraft.	L2	10
	b	With a neat block diagram explain how does the auto pilot system improve aircraft safety?	L3	10
OR				
Q.02	a	Outline the main components of hydraulic systems in aircraft?	L2	10
	b	Examine how does the landing gear system support an aircraft during takeoff and landing?	L2	10
Module-2				
Q. 03	a	Identify the main components of an ignition system and explain in detail.	L2	10
	b	Contrast the fuel delivery system between piston-engine aircraft and jet-engine aircraft?	L2	10
OR				
Q.04	a	Analyze the importance of oxygen and pressurization systems for high-altitude flights.	L4	10
	b	Explain the impact of de-icing and anti-icing systems on aircraft safety and performance.	L2	10
Module-3				
Q. 05	a	With a neat labeled diagram demonstrate the function of gyroscope instrument in an aircraft instrumentations.	L3	10
	b	Describe function and importance of Mach meters and Altimeters in aircraft instrumentation.	L2	10
OR				
Q. 06	a	Discuss the importance of temperature gauges in monitoring engine health and performance.	L3	10
	b	Simplify how does a tachometer contribute to flight safety and engine performance monitoring?	L2	10
Module-4				
Q. 07	a	Examine the primary function of a bus bar system in an aircraft's electrical power distribution?	L2	10
	b	Identify the role of special-purpose cables in an aircraft's power distribution system.	L2	10
OR				
Q. 08	a	Compare the avionics needs of military aircraft with those of civil aircraft.	L2	10
	b	Illustrate electrical diagram for a basic aircraft electrical system.	L2	10
Module-5				
Q. 09	a	Explain the main types of display technologies used in modern aircraft cockpits?	L2	10
	b	Illustrate the function of MIL-STD-1553B in data bus communication.	L3	10

OR				
Q. 10	a	Summarize a navigation system with GPS and inertial navigation capabilities.	L3	10
	b	Examine fire protection detect systems and suppress fire systems in aircraft?	L4	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.

Model Question Paper-2 with effect from 2022-23 (CBCS Scheme)

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Sixth Semester B.E. Degree Examination Aircraft Systems and Avionics

TIME: 03 Hours

Max. Marks: 100

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

Module -1			*Bloom's Taxonomy Level	Marks
Q.01	a	With a neat diagram explain digital fly by wire system.	L2	06
	b	Explain power assisted and power operated system.	L2	08
	c	Describe the advantages and disadvantages of autopilot system	L1	06
OR				
Q.02	a	With a neat sketch, explain about typical high pressure pneumatic system.	L2	10
	b	Explain basic brake control system with neat labelled diagram.	L2	10
Module-2				
Q. 03	a	What is the purpose of an aircraft fuel system? With a neat sketch explain the generalized fuel system for large transport aircraft.	L1,2	12
	b	What are some of the factors that influence the choice of the starting system?	L1	08
OR				
Q.04	a	With relevant sketch, briefly explain regarding air cycle cooling system.	L2	08
	b	Explain the most common types of fire detection system used on aircraft.	L1,2	12
Module-3				
Q. 05		With a neat sketch, explain the working operations of the following instruments. i. Thermocouple ii. Machmeter iii. Pitot static system iv. Gyroscope	L1,2	20
OR				
Q. 06		Explain the principle and operation for the following with neat labelled diagram: i. Accelerometer ii. Altimeters iii. Airspeed Indicator iv. Electrical tachometer	L1,2	20
Module-4				
Q. 07	a	With the help of a neatly labelled schematic diagram, explain the split bus bar system used for electrical power distribution on board the aircraft.	L2	10
	b	With a neat schematic block diagram, explain the overall avionics system architecture for a military aircraft.	L2	10
OR				
Q. 08	a	Explain briefly about the special purpose cables in aircraft electrical systems.	L2	8
	b	What do you mean by pole and throw? Explain with the help of suitable	L2	5

		sketches the possible arrangement?		
	c	Explain the importance of avionics systems in civil and military aircrafts.	L1	7
Module-5				
Q. 09	a	With the help of schematic diagram, briefly explain the different word formats used in MIL 1553B data bus.	L1	10
	b	Explain the principle of inertial navigation system with suitable diagram.	L1	10
OR				
Q. 10		Write short note on: i. HUD ii. HOTAS iii. Plasma Panel iv. MFDs	L2	20