U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E. **Semester: IV**

Branch: Aerospace Engineering **Duration: 3 hrs.**

Course Code: 23AS4ETIST **Max Marks: 100**

Course: Introduction to Space Technology

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

			UNIT - I	***CO***	***PO***	**Marks**
1	a)	Briefly describe the formation of the Star. What is the difference between a planetary nebula and a supernova?		*CO1*	*PO1*	**10**
	b)	What are the primary functions of a Spacecraft? Classify five different types of spacecraft and briefly describe their mission objectives.		*CO1*	*PO1*	**10**
		OR				
2	a)	(i) Briefly describe the Apollo 11 mission. (ii) What was name of the first satellite that was put into space? Briefly describe that.		*CO1*	*PO1*	**10**
	b)	Briefly describe PSLV and GSLV space launchers.		*CO1*	*PO1*	**10**
		UNIT - II				
3	a)	(i)What do you understand by central force? State the major characteristics of central force. (ii) Write down Kepler's Law of Planetary motion.		*CO1*	*PO1*	**10**
	b)	State and prove the transport theorem.		*CO1*	*PO2*	**10**
		OR				
4	a)	Describe, using appropriate mathematical equations, two body problems in an inertial frame.		*CO1*	*PO2*	**10**
	b)	Show that central force motion occurs in a plane.		*CO1*	*PO2*	**10**
		UNIT - III				
5	a)	Briefly describe six layers of the Sun.		*CO2*	*PO1*	**10**

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		b)	Describe the interaction of Solar wind and Geomagnetic field.	*CO2*	*PO1*	**10**
			OR			
	6	a)	Briefly describe the effects of space environment on spacecraft.	*CO2*	*PO1*	**10**
		b)	Briefly describe five different types of propulsion systems.	*CO2*	*PO1*	**10**
			UNIT - IV			
	7	a)	Briefly describe the components of a typical communication system.	*CO3*	*PO1*	**10**
		b)	What do you understand by Remote sensing? Define passive and active sensor for remote sensing.	*CO3*	*PO1*	**10**
			OR			
	8	a)	Explain how a signal can be transmitted from one place to another.	*CO3*	*PO1*	**10**
		b)	Briefly describe the propagation characteristics of Direct Waves, Ground Waves, Sky Waves, and Space Waves.	*CO3*	*PO1*	**10**
			UNIT - V			
	9	a)	State different parts of the satellite systems. Briefly describe ground support components.	*CO4*	*PO1*	**10**
		b)	Describe the power subsystem and thermal subsystem.	*CO4*	*PO1*	**10**
			OR			
	10	a)	Briefly describe the system life cycle in spacecraft design	*CO4*	*PO1*	**10**
		b)	Explain the orbital maintenance subsystem and the propulsion subsystem.	*CO4*	*PO1*	**10**

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