Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2024

Subject Code:3161013   **Date:20-05-2024**

Subject Name:Systems Engineering

Time:10:30 AM TO 01:00 PM   **Total Marks:70**

Instructions:
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

			Marks
Q.1	(a)	List and Explain any two Engineering standards.	03
	(b)	Explain Fundaments of Systems Engineering.	04
	(c)	Explain Systems Engineering: History and Examples in detail.	07
Q.2	(a)	Explain system risk management.	03
	(b)	Explain how System Engineering as Profession built?	04
	(c)	Explain system interfaces and interaction in detail.	07
		OR	
	(c)	Explain System Engineering Management(SEM) in detail.	07
Q.3	(a)	Explain Hypothesis testing in detail.	03
	(b)	What is Lifecycle Integration? Explain it in detail.	04
	(c)	Define work breakdown structure. Also describe benefits and need of work breakdown structure.	07
		OR	
Q.3	(a)	Briefly demonstrate real life systems by the Indian Army.	03
	(b)	Compare System Engineering and traditional engineering.	04
	(c)	How probability data analysis carried out?	07
Q.4	(a)	Explain Model Based Systems Engg (MBSE) for Decision making in detail.	03
	(b)	Explain power of system engineering.	04
	(c)	Explain importance of system engineering with one example.	07
		OR	
Q.4	(a)	Explain complex system hierarchy.	03
	(b)	Describe major three activities of SE Management.	04
	(c)	Explain system environment and system boundaries in detail.	07
Q.5	(a)	Give any one example of complex system where system engineering is needed and explain it.	03
	(b)	Define redundancy in engineering design stage.	04
	(c)	Explain the Concepts of maintainability, availability, predictability.	07
		OR	
Q.5	(a)	Explain Test planning and preparation in detail.	03
	(b)	Describe functional analysis - Top down process.	04
	(c)	Describe Integration, testing and evaluation of Total system in detail.	07

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