

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3161013****Date:06/06/2022****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) Define various system Engineering definitions.	03
	(b) Explain power of system engineering.	04
	(c) Discuss SE as a profession.	07
Q.2	(a) Give any one example of complex system where system engineering is needed and explain it.	03
	(b) Compare System Engineering and traditional engineering.	04
	(c) Explain system interfaces and interaction in detail.	07
	OR	
	(c) Explain system environment and system boundaries in detail.	07
Q.3	(a) Describe system life cycle with block diagram.	03
	(b) List major system development characteristics.	04
	(c) Define work breakdown structure. Also describe benefits and need of work breakdown structure.	07
	OR	
Q.3	(a) Explain system risk management.	03
	(b) Describe Requirement analysis schematic in detail.	04
	(c) Explain system requirement types in detail.	07
Q.4	(a) Brief two development stages and one application stage in system life cycle stages.	03
	(b) Describe concept stage in detail.	04
	(c) Explain importance of system engineering with one example.	07
	OR	
Q.4	(a) Define redundancy in engineering design stage.	03
	(b) Describe major three activities of SE Management.	04
	(c) Explain Engineering development phase with example.	07
Q.5	(a) Discuss transition from development to production.	03
	(b) Describe functional analysis - Top down process.	04
	(c) Describe Integration, testing and evaluation of Total system in detail.	07
	OR	
Q.5	(a) Explain complex system hierarchy.	03
	(b) Briefly demonstrate real life systems by the Indian Army.	04
	(c) Explain engineering design stage in detail.	07
