

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022****Subject Code:3161013****Date:15-12-2022****Subject Name:Systems Engineering****Time:02:30 PM TO 05:00 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 a system.	03
	(b) Describe the difference between traditional Engineering. and Systems	04
	(c) Explain all phases of System Life Cycle.	07
Q.2	(a) What is lifecycle integration?	03
	(b) Explain complex system hierarchy in brief.	04
	(c) Explain Work breakdown structure (WBS).	07
	OR	
	(c) Explain in brief Systems Engineering Management.	07
Q.3	(a) What is requirement analysis?	03
	(b) Describe Systems risk management.	04
	(c) Explain the concept stage of system lifecycle.	07
	OR	
Q.3	(a) What is need analysis?	03
	(b) Explain functional analysis in brief.	04
	(c) Explain Model based Systems Engineering (MBSE)	07
Q.4	(a) What are trade studies?	03
	(b) Explain Product Implementation process in brief.	04
	(c) Explain the model for engineering development phase.	07
	OR	
Q.4	(a) What is specialty engineering?	03
	(b) Explain Product Validation process in brief.	04
	(c) Explain design synthesis processes in detail.	07
Q.5	(a) What is design synthesis?	03
	(b) Explain System Maintenance Process in brief.	04
	(c) Explain Integration, Verification and Validation of a system	07
	OR	
Q.5	(a) What is system integration?	03
	(b) Explain System Operation Process in brief.	04
	(c) Explain Product Verification process in detail.	07
