Q.P. Code: **16EE7513** **R16**

Reg. No | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

M.Tech I Year II Semester Regular Examinations June 2017

ROBUST CONTROL

(CONTROL SYSTEMS)

(For Students admitted in 2016 only)

Time: **3 hours** Max. Marks: **60**

(Answer all Five Units **5 X 12 =60** Marks)

UNIT-I

1	a	Define the Transfer function. Explain considering the linear model.	6M
	b	Explain how to Evaluating the closed - loop performance	6M
		OR	
2	a	Discuss the Feedback control system in detail.	6M
	b	Explain the concept of Loop shaping	6M
		UNIT-II	
3	a	What is MIMO system, and in what sense is the design of a control system for MIMO process different from that for a SISO process.	6M
	b	What are the performance and robustness specifications for a MIMO LTI system?	6M
		OR	
4	a	Explain the internal stability of linear system theory.	6M
	b	Explain concept of input – output controllability.	6M
		UNIT-III	
5	a	What are the fundamental limitations imposed by RHP – poles in SISO systems?	6M
	b	What are the performance requirements imposed by disturbances and commands in SISO systems?	6M
		OR	
6	a	Explain the limitations imposed by input constraints in MIMO systems.	6M
	b	Explain the limitations imposed by RHP – zeros in MIMO systems.	6M
		UNIT-IV	
7	a	Explain concept of robustness of the SISO system.	6M
	b	Explain the parametric uncertainty of SISO system.	6M
		OR	
8	a	Discuss the robust stability in SISO system in detail.	6M
	b	Explain uncertainty representation in frequency domain.	6M
		UNIT-V	
9	a	Explain the concept of robust stability of the MΔ-structure.	6M
	b	Explain properties and computation of μ.	6M
		OR	
10	a	Explain the design procedure of H_∞ Loop shaping.	6M
	b	Discuss the concept of LQG control .	6M

***** END *****