

Enroll No

K.E.Society's
Rajarambapu Institute of Technology, Rajaramnagar
 (An Empowered Autonomous Institute, affiliated to SUK)
Unit Test -I (2025-26)

Q.P. Code
UT 2071

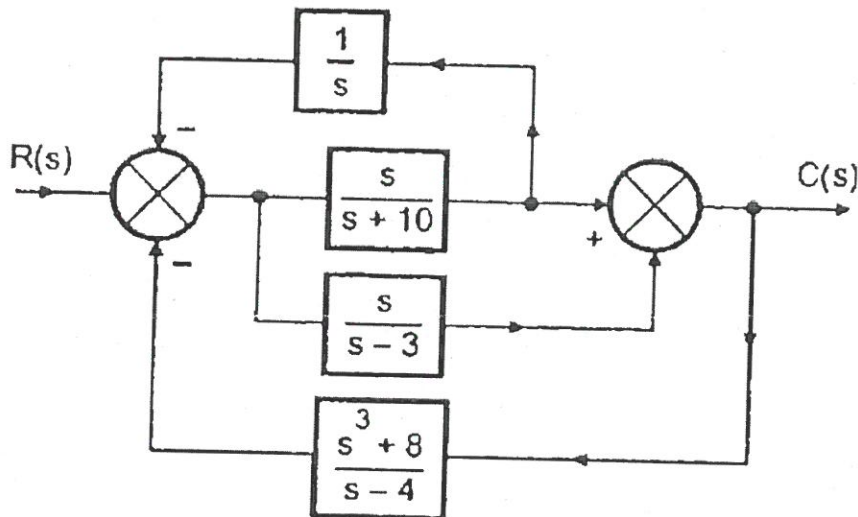
T.Y. B. Tech.-Electronics & Telecommunication Engineering
Course Code: EC317 **Course Name: Control Systems**

Day & Date: Tuesday 12/08/2025
 Time: 11:45 To 12:45

Max Marks- 25

- Instructions:**
- 1) All questions are compulsory.
 - 2) Figures in rounded () brackets within the question, indicate the scheme of marking for respective part of the question, whereas, figures in the first right column indicate total marks for that whole question.
 - 3) CO is the index number of the Course Outcome statement.
 - 4) The Bloom's taxonomy level (BL) for 1,2,3,4,5 and 6 is remember, understand, apply, analyze, evaluate and create respectively.
 - 5) Assume suitable data if necessary.
 - 6) Use of non-programmable calculators is allowed

		Marks	BT Level	COs
Q.1 A	Compare between open loop and closed loop control system.	7	2	1
B	Reduce the block diagram and find C(S)/R(S) (2 Marks each step)	6	4	1



OR

Convert above diagram into signal flow graph (2) and find transfer function using Mason's gain formula (4).



- Q.2 A Derive output equation of time response of first order system (4). Show transient and steady state part separately with graph. (2). 6 4 2

OR

Draw and explain any three standard test signals used to study time response of control system with time and Laplace domain representation. (2 M each)

- B A unity feedback system has $G(s) = \frac{40(s+2)}{(s(s+1)(s+4))}$ 6 4 2
Determine all error coefficients and steady state error for unit step, ramp and parabolic input. (2 Mark each).

