

SE - sem IV (ECS) (C-Scheme) (Rev-19) Dec 2025

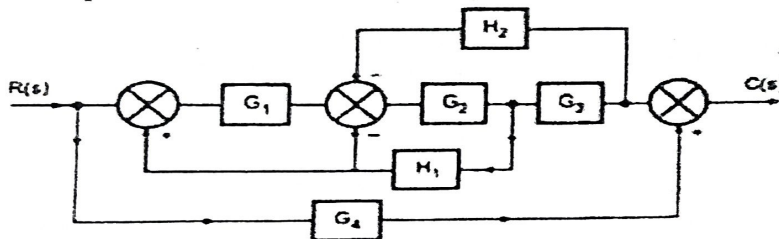
Duration: 3hrs

QP Code 95956

Marks:80 08/12/2025

- N.B.: (1) Question No 1 is Compulsory.  
 (2) Attempt any three questions out of the remaining five.  
 (3) All questions carry equal marks.  
 (4) Assume suitable data, if required and state it clearly.

- 1 Attempt any **FOUR** [20]  
 a Explain GPIB and its working. [5]  
 b Compare steady state analysis of standard test inputs. [5]  
 c Classify time and frequency domain. [5]  
 d Differentiate sensors and transducers. [5]  
 e What are the types of data logger and give its applications [5]  
 f Explain Mod bus in detail [5]  
 2 a For the given block diagram obtain equivalent T.F. by block diagram reduction [10]



- b Draw the Nyquist Plot and comment on stability [10]  

$$G(S)H(S) = \frac{K}{s(s+4)(s+8)}$$
  
 3 a Find the Steady state error for various types of standard test inputs for a unity feedback [10]  
 system with  $G(s) = \frac{K}{s(s+5)(s+10)}$ , (a)  $K=10$  and (b)  $K=200$   
 b Find the range of  $K$  for Stability by Routh Criterion for a unity feedback system . Find [10]  
 $K_{mar}$  and  $\omega_{mar}$ .  

$$G(S) = \frac{K}{s(s+2)(s+4)(s+6)}$$
  
 4 A Draw the Root Locus and comment on system stability.  $G(s)H(s) = \frac{K(s+8)}{s(s+2)}$ . [10]  
 b For the system having the open loop transfer function draw the bode plot and determine [10]  
 the stability  

$$G(S)H(S) = \frac{100(s+3)}{s(s+1)(s+5)}$$
  
 5 a Analyze the construction and working of displacement transducers. Also, discuss its [10]  
 applications.  
 b Compare the working of Landline Telemetry and Radio Telemetry [5]  
 6 Write Short notes [20]  
 a Field Bus [5]  
 b SCADA [5]  
 c Thermocouple [5]  
 d Fibre Optic Communication [5]

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