

Electronic Instrument & Control systems.

(22)

BM/IV/CBGS/EICS

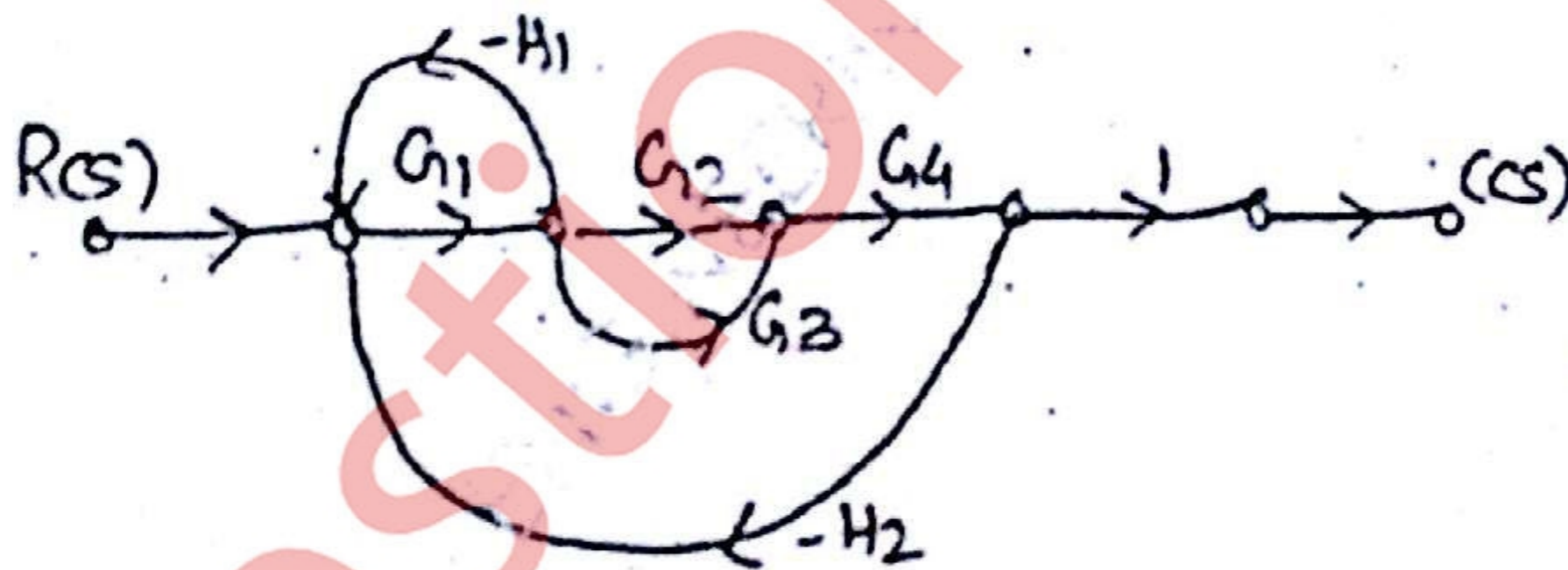
Q.P. Code : 3588

(3 Hours)

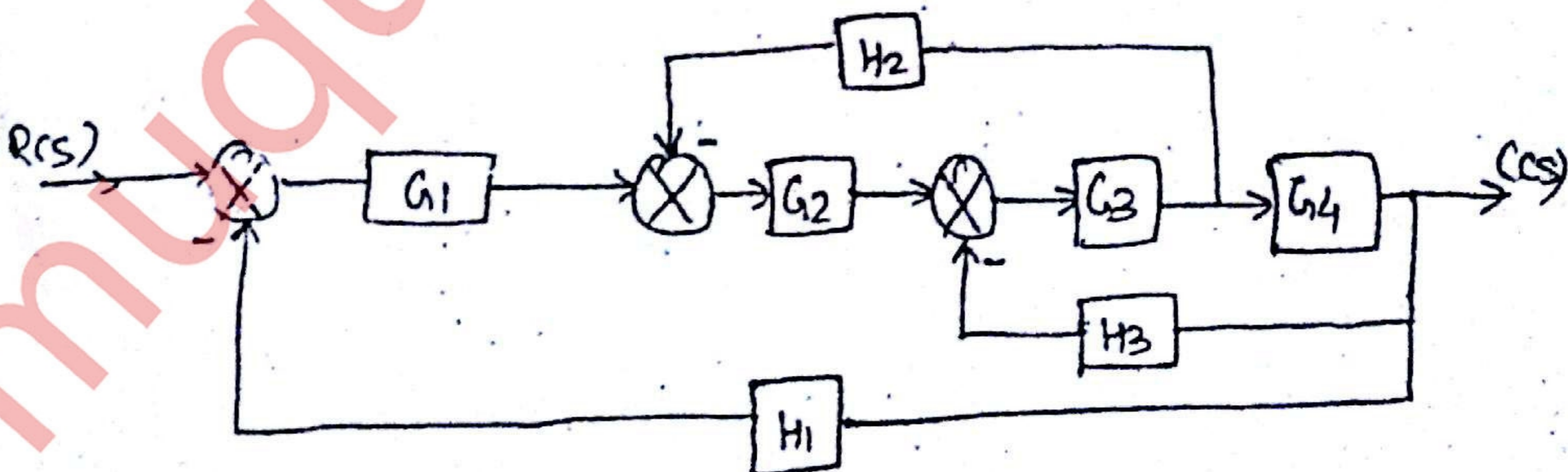
[ Total Marks : 80

- N.B.: (1) Question No. 1 is compulsory.  
 (2) Attempt any three from the remaining five.  
 (3) Figures to the right indicate full marks.  
 (4) Draw suitable diagram whenever necessary.

1. a) Differentiate between closed loop and open loop control system. 20
- b) State mason's gain formula.
- c) Define sensitivity and resolution of digital voltmeter.
- d) Explain focus and intensity control in CRO.
2. a) Draw and explain peak and average responding voltmeter. 10
- b) Draw and explain block diagram of dual slope DVM. Also state its advantages over single slope DVM. 10
3. a) Find out transfer function using mason's gain formula. 5



- b) Derive transfer function for the following block diagram. 5



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3. c) Explain transient response specifications of second order system. 10
4. a) Draw and explain block diagram of C.R.O. 10
- b) Check the stability of the system whose characteristic equation is  $2s^6 + 4s^5 + s^4 - 32s^3 + 51s$  5
- c) Explain factors involved in selection of voltmeter 5
5. a) Sketch the root locus for  $G(s) H(s) = \frac{K}{s(s+2)(s+4)}$  10
- b) What are Lissajous patterns? Explain frequency and phase measurement using it. 10
6. a) Sketch the bode plot for the transfer function. 10
- $$G(s) = \frac{1000}{(1+0.1s)(1+0.001s)}$$
- Determine phase margin, Gain margin and stability of system.
- b) Draw and explain block diagram and working of function generator. 10