CONTROL SYSTEM THEORY (EEE310)

Assignment No: 2

Q1. Define the following terms:

(a) System **(b)** Control System **(c)** Command Input **(d)** Reference Input **(e)** Forward Path **(f)** Feedback path **(g)** output **(h)** disturbance **(i)** Plant **(j)** Actuating Signal

Q2. Explain how control systems are classified?

Q3. Explain open loop and closed loop control systems by giving suitable examples.

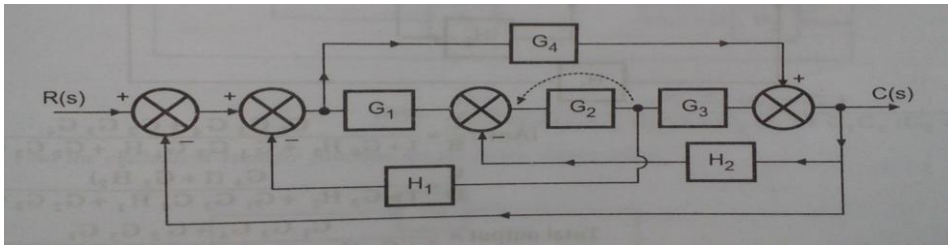
Q4. Differentiate between open loop and close loop control system.

Q5. What are the requirements of the good control system?

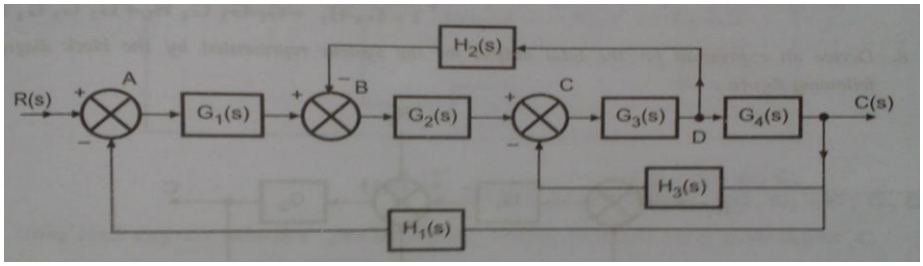
Q6. What is block diagram representation? State its advantages and disadvantages. Explain various block diagram reduction rules.

Q7. Use the block diagram reduction rules to obtain the transfer function of the following block diagrams:

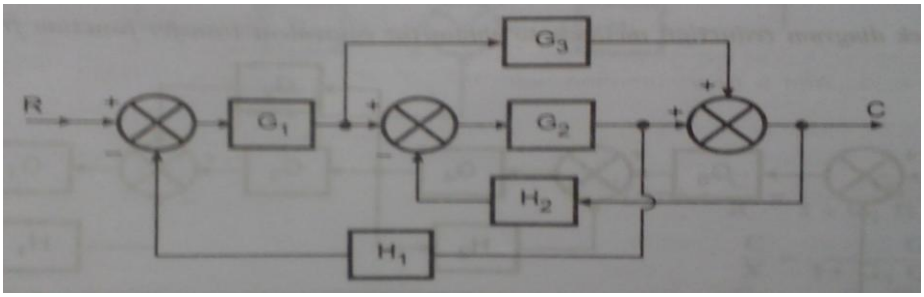
(i)



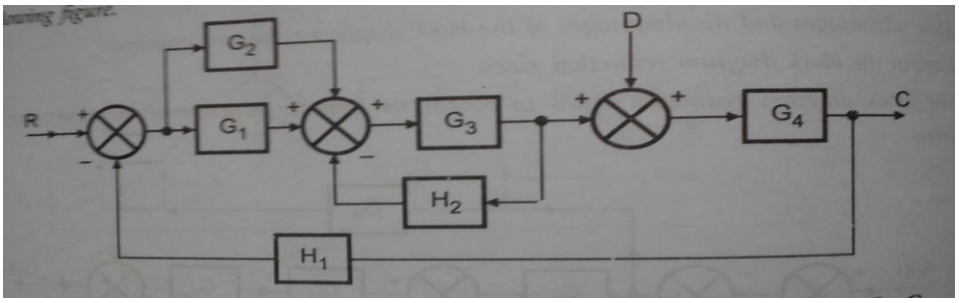
(ii)



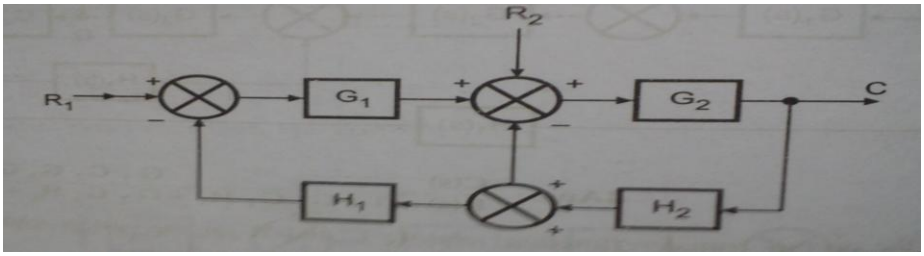
(iii)


R
G3
G1
G2
C
H2
H1

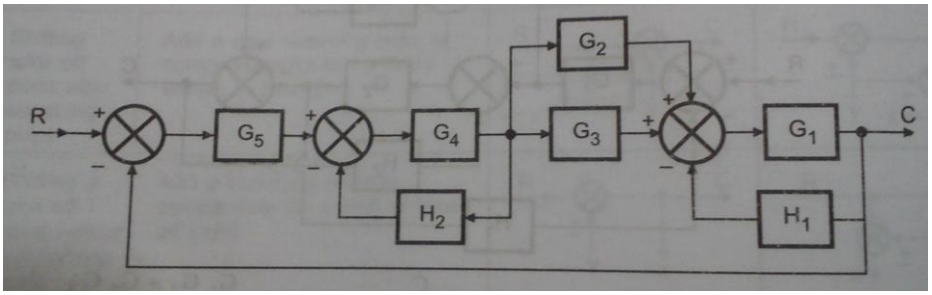
(iv)


D
G2
R
G1
G3
G4
C
H2
H1

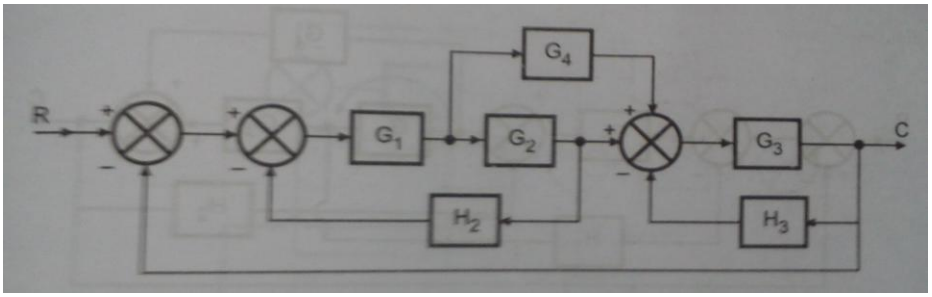
(v)


R2
R1
G1
G2
C
H1
H2

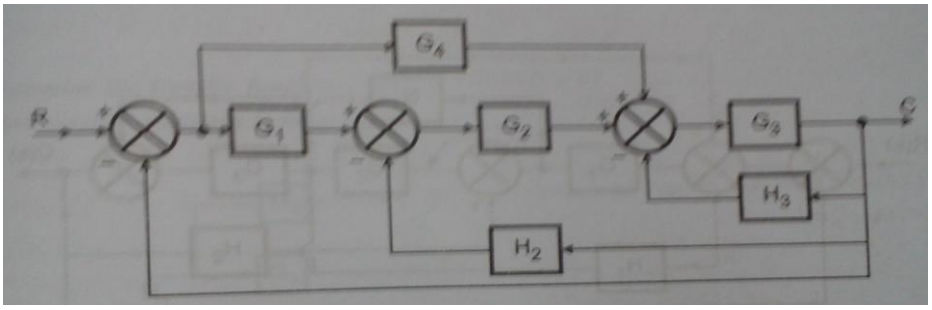
(vi)


G2
R
G5
G4
G3
G1
C
H2
H1

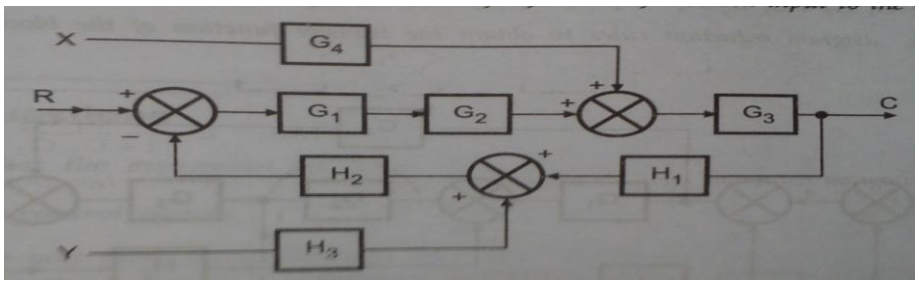
(vii)


R
G4
G1
G2
G3
C
H2
H3

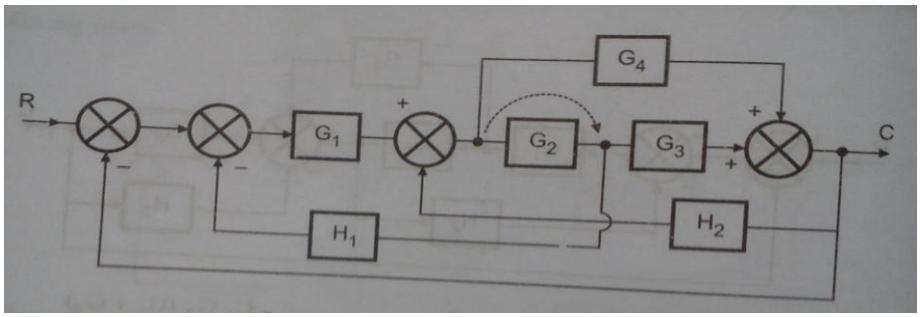
(viii)


G4
G1
G2
G3
H3
H2

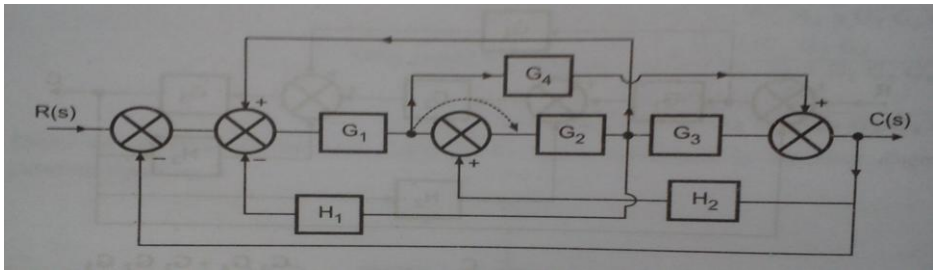
(ix)


X
G4
R
G1
G2
G3
C
H2
H1
Y
H3

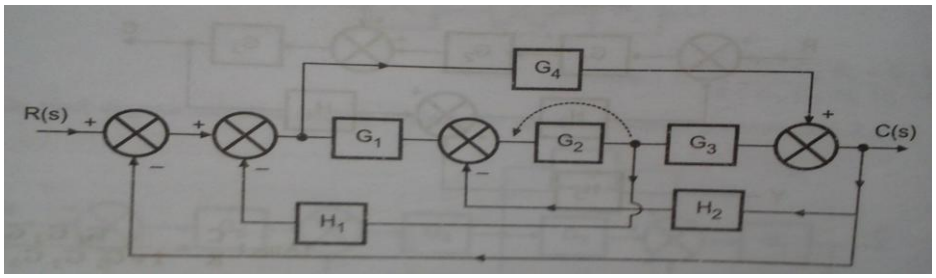
(x)


R
G4
G1
G2
G3
C
H1
H2

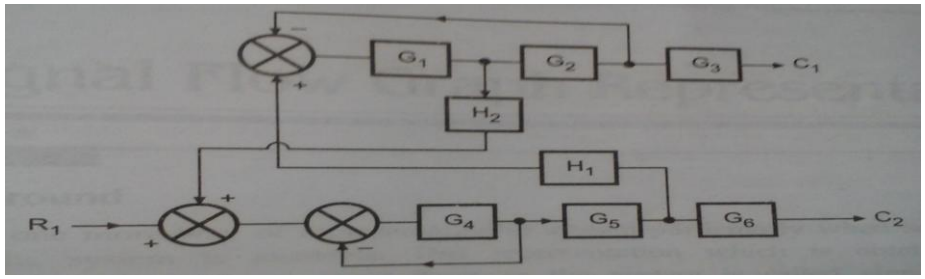
(xi)



(xii)



(xiii)



(xiv)