Unit 1

ASSIGNMENT

CONTROL SYSTEM (BEC-302)

1. What are the basic components of a control system?
2. Compare open loop control system with close loop control system.
3. How many types of feedbacks are there? Explain the advantages and disadvantages of each.
4. Define feedback and its effect on control system.
5. Explain all rules for block diagram reduction techniques.
6. Find the transfer function for the given block diag. representations.

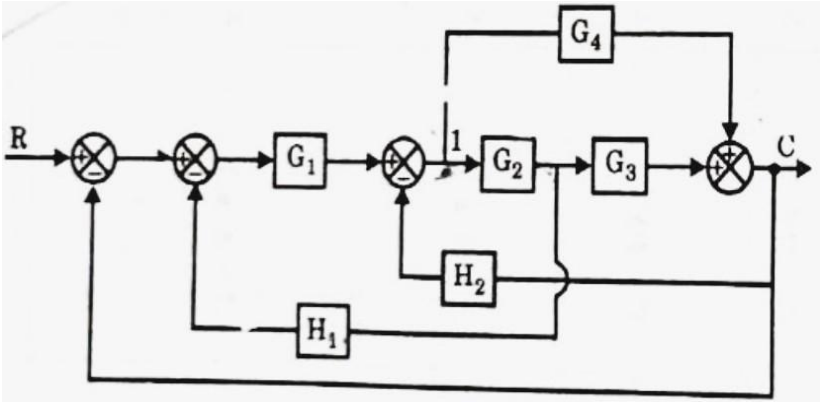

Fig 1

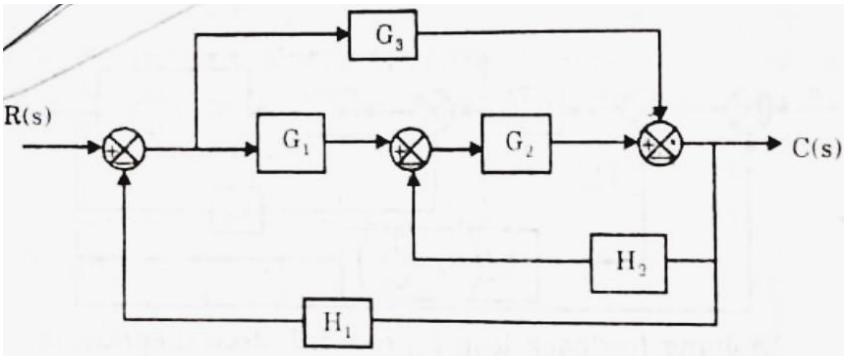

Fig 2

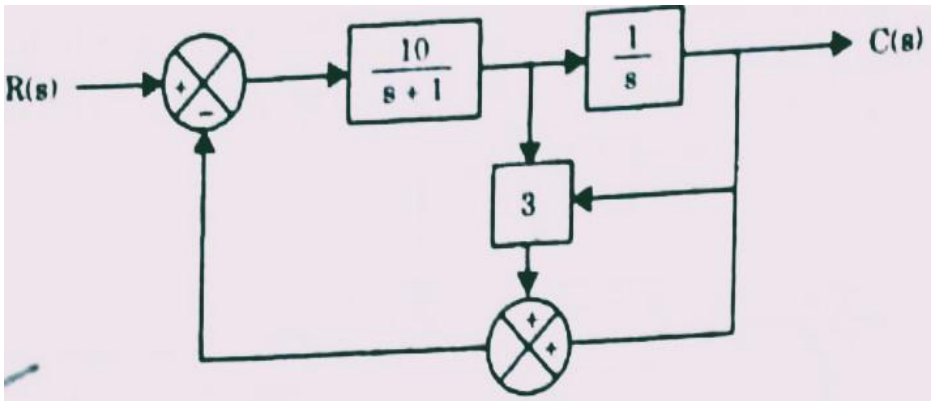

Fig 3

7. Determine the transfer function (C1/R1),(C1/R2),(C2/R1), and (C2/R2) for the given block diag. representation.

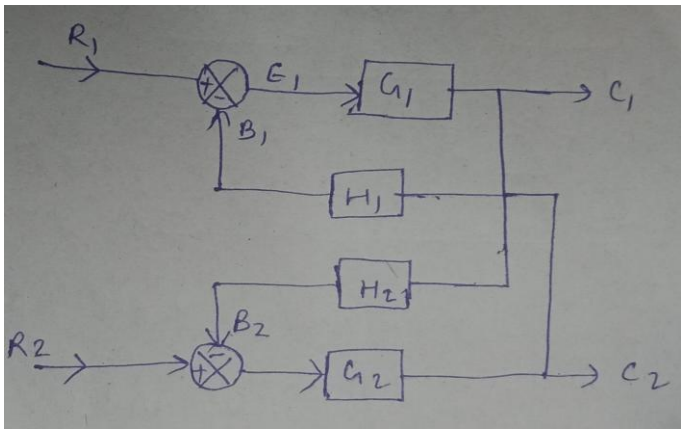

Fig 4

8. Find the transfer function for the signal flow graph.

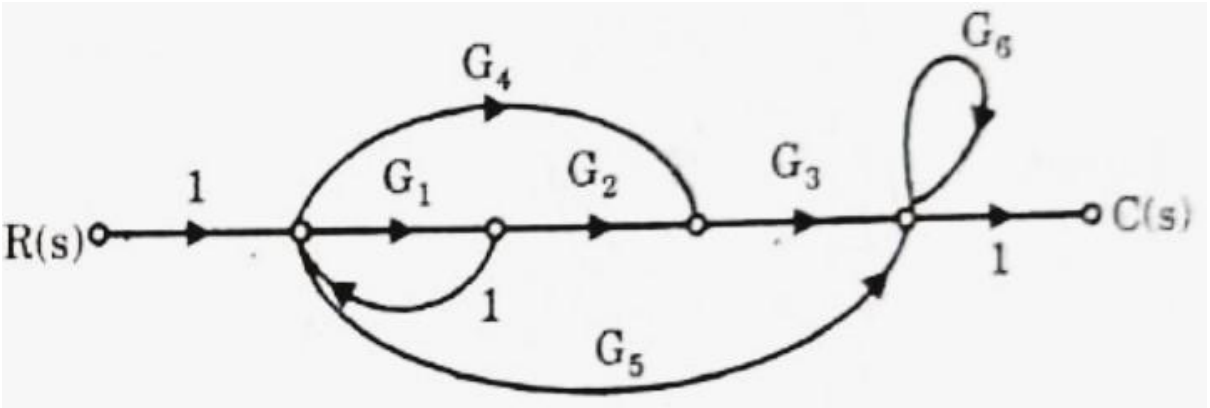

Fig 5

9. What is signal flow graph? How it is constructed?
10. What are the two different methods to obtain SFG? Explain with example.

11. Draw the SFG of the given block diag. and find its transfer function.

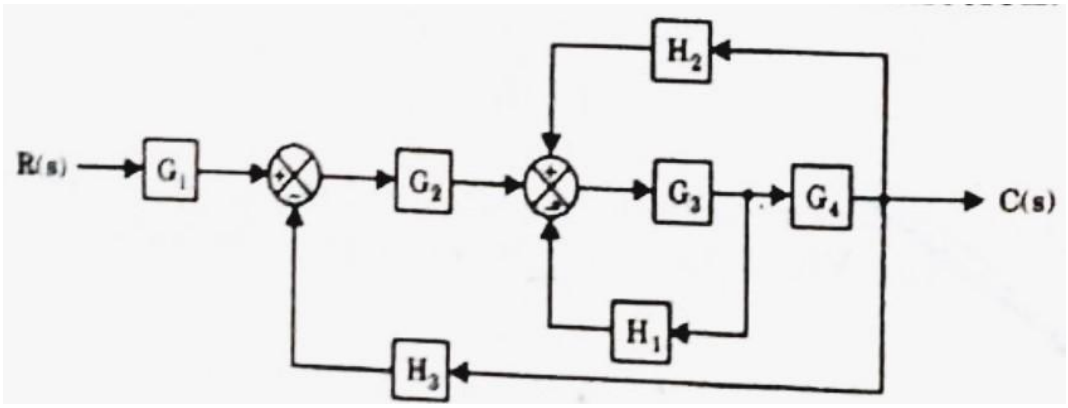

Fig 6

12. Find the transfer function Y7/Y1 of the signal flow graph.

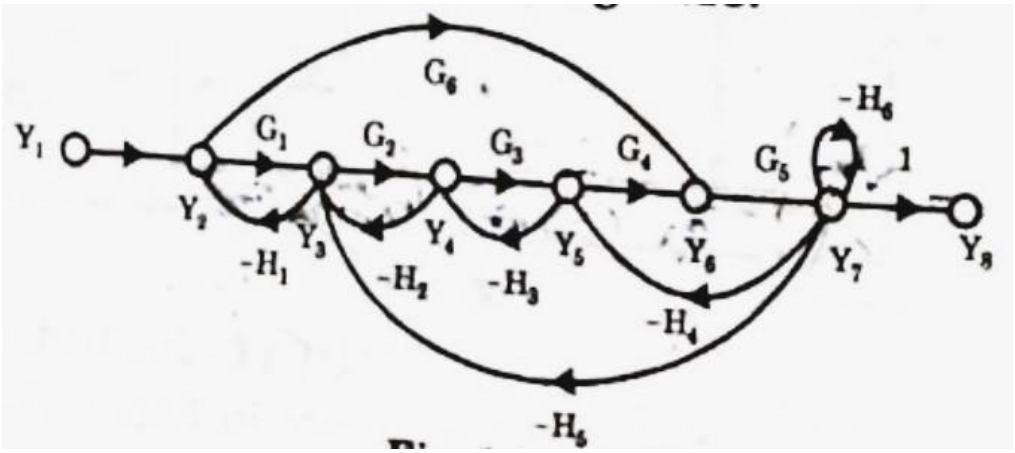

Fig 7

13. Find the transfer function C/R for the signal flow graph.

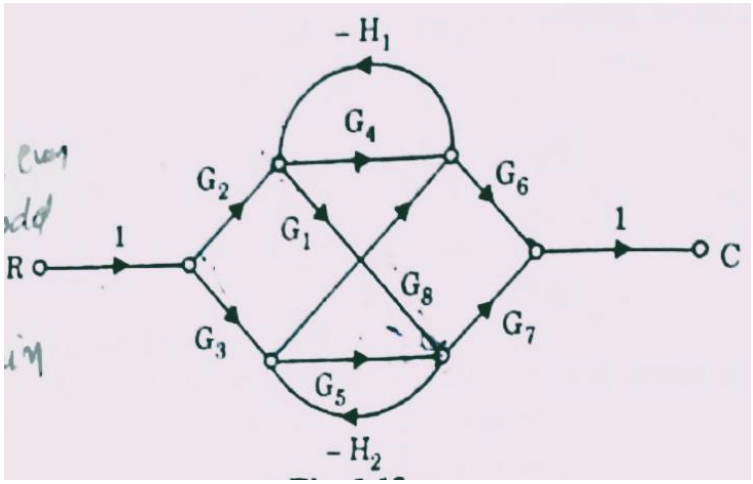

Fig 8

14. What is modelling in electrical system?

15. Find the transfer function of the circuit.

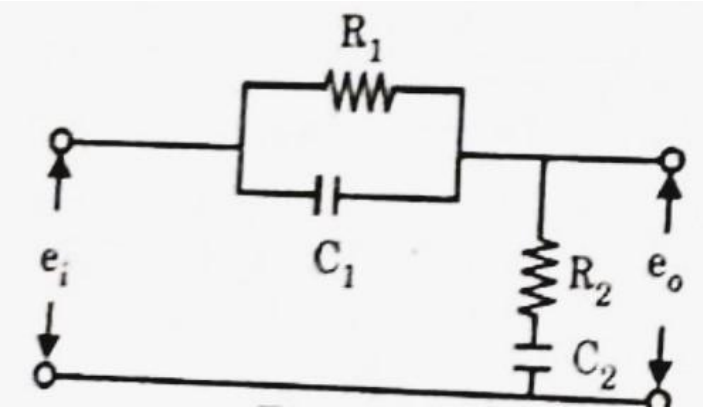

Fig 9

16. How modelling of mechanical system is done?
17. Draw the electrical analogous circuit of the system given below

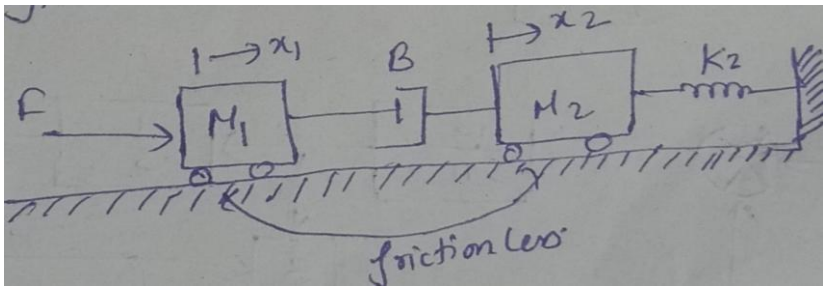

Fig 10

18. What are the physical quantities (i) force (ii) mass (iii) damper (iv) displacement and (v) velocity analogous to in the force current analogy and force voltage analogy?
19. Explain : (i) force-voltage analogy (ii) force-current analogy