Roll No. .....

24322

B. Tech 6th Semester (EE)

Examination – May, 2016

CONTROL SYSTEMS ENGINEERING

Paper : EE -304-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 will be ***compulsory.*** Attempt any ***four*** questions selecting at least ***one*** question from each Section. Attempt total ***five*** questions in all

1. (a) Discuss the examples of plants and their input and outputs. 5

(b) Explain the signal flow graph. 5

(c) Discuss briefly Hurwitz stability criterion. 5

(d) Discuss the application of flag and lead compensation. 5

SECTION – A

2. Discuss the following : 20

(i) Time varying system

(ii) Causal system

(iii) Open loop conbol system

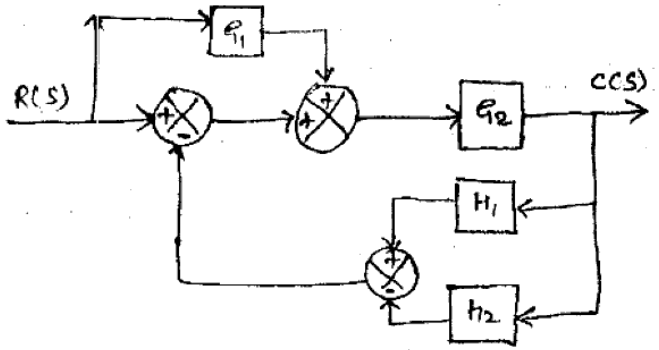
(iv) Closed loop conbol system

3. State and explain state space Representation of Dynamic system. 20

SECTION – B

4. Derive the Derivation of Transfer functions of electrical and electromechanical system. 20

5. Simplify the block diagram shown below and obtained the transfer function C(S)/R(S). 20



SECTION – C

6. (a) Discuss time response of 2nd order system to step Input. 10

(b) Discuss sleedy state error and error constant. 10

7. Discuss Root locus concept, development of root loci for various system, stability considerations. 20

SECTION – D

8. Explain the Relationship b/w freq response and time response for 2nd order system. 20

9. Write short notes on : 20

(i) Synchros AC and DC techo generators.

(ii) Magnetic amplifier.