No. of Printed Pages : 3

BIEE-035(S)

DIPLOMA IN ELECTRICAL ENGINEERING (DELVI)

Term-End Examination

December, 2016

00098

BIEE-035(S) : CONTROL SYSTEMS

Time : 2 hours *Maximum Marks : 70*

Note :

(i) *Attempt any **five** questions.*

(ii) *Use of scientific calculator is permitted.*

1. In Laplace transform, explain initial value and final value theorem. *14*

2. (a) Find $\frac{C(s)}{R(s)}$ in the following block diagram as shown in Figure 1, using block reduction method : *7*

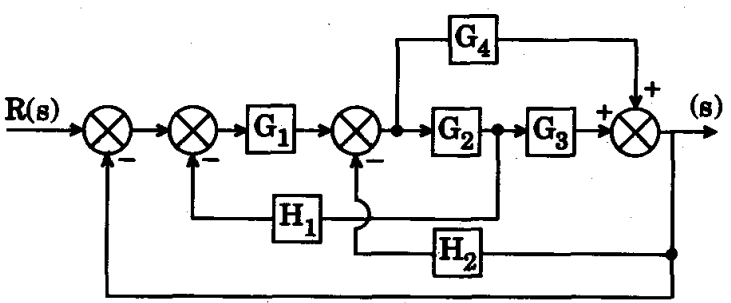

Figure 1

(b) Determine the transfer function of the given circuit as shown in Figure 2. 7

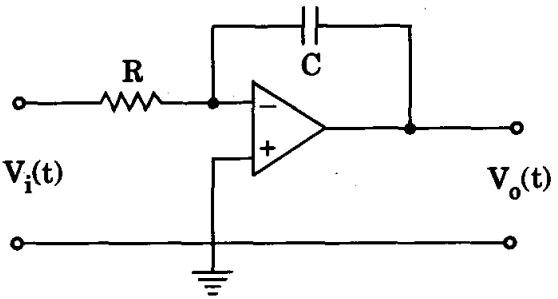

Figure 2

3. Determine the time response of a second order system with unit step input. Also find out its steady state value. *14*

4. Define stability and relative stability. Explain the effects of location of poles on stability. *14*

5. (a) Explain the role of controllers in process industry. 7

(b) With the help of a block diagram, clearly explain Derivative controller. Also explain the effect of steady state error in derivative control action. 7

6. With the help of neat diagrams explain the following : *14*

   (a) Single-stack variable reluctance stepper motor

   (b) Multi-stack variable reluctance stepper motor

7. Define Robotics. Draw and explain the functional diagram of robotics. *14*