C 3217

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Fourth Semester

Mechatronics Engineering

EE 1264 — CONTROL SYSTEMS

(Regulation 2004)

Time : Three hours   Maximum : 100 marks

Chart : Semi-log sheet is to be supplied.

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   Write Mason's Gain formula.

2.   Define transfer function of a system.

3.   Sketch a typical step response of a second order under damped system.

4.   State type and order of the following system :

$$G(s) = \frac{200}{s^2 + 20s + 200}.$$

5.   Draw a typical polar plot of a first order system.

6.   Define Gain margin.

7.   State the rule for obtaining the break away points on the root loci.

8.   What is the location of roots of characteristic equation in s-plane for a system to be stable?

9.   What is the need for compensation circuit?

10. List the different types of compensators?