1. A lag compensator is basically a

   a. High pass filter

   b. Band pass filter

   c. Low pass filter

   d. Band elimination filter

   Ans: C

2. What is the effect of phase-lag compensation on the performance of a servo system?

   a. For a given relative stability, the velocity constant is increased

   b. For a given relative stability, the velocity constant is decreased

   c. The bandwidth of the system is increased

   d. The time response is made faster.

   Ans: A

3. In the derivative error compensation

   a. Damping decreases and settling time decreases

   b. Damping increases and settling time increases

   c. Damping decreases and settling time increases.

   d. Damping increases and settling time decreases

   Ans: D

4. The input to a controller is

   a. Sensed signal

   b. Error signal

   c. Desired variable value

   d. Signal of fixed amplitude not dependent on desired variable value

   Ans: B

5. When the time period of observation is large, the type of the error is

   a. Transient error

   b. Steady state error

   c. Half power error

    d. Position error constant

      Ans: B

6. Settling time is the time required for the system response to settle within a certain percentage of

    a. Maximum vaue

    b. Final value

    c. Input amplitude value

    d. Transient error value

      Ans: B

7. The type of system which is used for determination of static error constants is determined from the number of

    a. Zeros at origin for open loop transfer function

    b. Poles at origin for open loop transfer function

    c. Zeros at origin for closed loop transfer function

    d. Poles at origin for closed loop transfer function

      Ans: B

8. In the type-1 system, the velocity error is

    a. Inversely proportional to bandwidth of the system

    b. Directly proportional to gain constant

    c. Inversely proportional to gain constant

    d. Independent of gain constant

      Ans; B

9. The roots of the characteristic equation $1 + G(s) + H(s) = 0$ are the same as the

    a. Poles of the closed loop transfer function

    b. Poles of the open loop transfer function

    c. Zero of the closed loop transfer function

    d. Zeros of the open loop transfer function

      Ans: A

10. For the minimum phase system to be stable

a. Phase margin should be negative and gain margin should be positive

b. Phase margin should be positive and gain margin should be negative

c. Both phase margin and gain margin should be positive

d. Both phase margin and gain margin should be negative

Ans: C