

1. The system with the open loop transfer function  $1/s(1+s)$  is:

- a) Type 2 and order 1
- b) Type 1 and order 1
- c) Type 0 and order 0
- d) Type 1 and order 2

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Answer: d

2. The identical first order system have been cascaded non-interactively. The unit step response of the systems will be:

- a) Overdamped
- b) Underdamped
- c) Undamped
- d) Critically damped

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Answer: d

3. A third order system is approximated to an equivalent second order system. The rise time of this approximated lower order system will be:

- a) Same as the original system for any input
- b) Smaller than the original system for any input
- c) Larger than the original system for any input
- d) Larger or smaller depending on the input

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Answer: b

4. A system has a single pole at origin. Its impulse response will be:

- a) Constant
- b) Ramp
- c) Decaying exponential
- d) Oscillatory

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Answer: a

5. When the period of the observation is large, the type of the error will be:

- a) Transient error
- b) Steady state error
- c) Half-power error
- d) Position error constant

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Answer: b

6. When the unit step response of a unity feedback control system having forward path transfer function  $G(s) = 80/s(s+18)$ ?

- a) Overdamped
- b) Critically damped
- c) Under damped
- d) Un Damped oscillatory

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Answer: a

7. With negative feedback in a closed loop control system, the system sensitivity to parameter variation:

- a) Increases
- b) Decreases
- c) Becomes zero
- d) Becomes infinite

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Answer: b

8. An underdamped second order system with negative damping will have the roots :

- a) On the negative real axis as roots
- b) On the left hand side of complex plane as complex roots
- c) On the right hand side of complex plane as complex conjugates
- d) On the positive real axis as real roots

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Answer: c

9. Given a unity feedback system with  $G(s) = K/s(s+4)$ . What is the value of K for a damping ratio of 0.5?

- a) 1
- b) 16
- c) 4
- d) 2

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Answer: b

10. How can the steady state error can be reduced?

- a) By decreasing the type of the system
- b) By increasing system gain
- c) By decreasing the static error constant
- d) By increasing the input

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Answer: d