1. The constant M circle for M=1 is the
a) straight line x=-1/2
b) critical point (-1j0)
c) circle with r= 0.33
d) circle with r=0.67
View Answer

Answer: a

2. The polar plot of a transfer function passes through the critical point (-1,0). Gain margin is
a) Zero
b) -1dB
c) 1dB
d) Infinity
View Answer

Answer: a

3. Consider the following statements:
1. The effect of feedback is to reduce the system error
2. Feedback increases the gain of the system in one frequency range but decreases in another
3. Feedback can cause a system that is originally stable to become unstable
Which of these statements are correct.
a) 1,2 and 3
b) 1 and 2
c) 2 and 3
d) 1 and 3
View Answer

Answer: c

4. The open loop transfer function of a system is G(s) H(s)= K / (1+s)(1+2s)(1+3s)
The phase cross over frequency ωc is
a) V2
b) 1
c) Zero
d) V3
View Answer

Answer: b

5. If the gain of the open-loop system is doubled, the gain margin
a) Is not affected
b) Gets doubled
c) Becomes half
d) Becomes one-fourth
View Answer

Answer: a

6. The unit circle of the Nyquist plot transforms into 0dB line of the amplitude plot of the Bode diagram at
a) 0 frequency
b) Low frequency
c) High frequency
d) Any frequency
View Answer

Answer: d

7. Consider the following statements:
The gain margin and phase margin of an unstable system may respectively be
1. Positive, positive
2. Positive, negative
3. Negative, positive
4. Negative, negative
Of these statements

a) 1 and 4 are correct
b) 1 and 2 are correct
c) 1, 2 and 3 are correct
d) 2,3 and 4 are correct
View Answer

Answer: d

8. If a system has an open loop transfer function
1-s / 1+s, then the gain of the system at frequency of 1 rad/s will be
a) 1
b) 1/2
c) Zero
d) -1
View Answer

Answer: d

9. The polar plot of the open loop transfer function of a feedback control system intersects the real axis at -2. The gain margin of the system is
a) -5dB
b) 0dB
c) -6dB
d) 40dB
View Answer

Answer: c

10. The corner frequencies are
a) 0 and 1
b) 0 and 2
c) 0 and 1
d) 1 and 2
View Answer

Answer: d

11. For the transfer function
G(s) H(s) = 1 / s(s+1) (s+0.5), the phase cross-over frequency is
a) 0.5 rad/sec
b) 0.707 rad/sec
c) 1.732 rad/sec
d) 2 rad/sec
View Answer

Answer : b

12. The gain margin (in dB) of a system having the loop transfer function
G(s) H(s) = 2 / s(s+1) is
a) 0
b) 3
c) 6
d) 8
View Answer

Answer: d

13. The gain margin for the system with open loop transfer function
G(s) H(s) = G(s) =2(1+s) / s2 is
a) 8
b) 0
c) 1
d) -8
View Answer

Answer: b

14. Statement 1: In constant M circles, as M increases from 1 to 8 radius of circle increases from 0 to 8 and Centre shifts from (-1,0) to (-8,0)
Statement 2: The circle intersects real axis at point (-1/2, 0)
a) Statement 1 is TRUE, 2 is FALSE
b) Statement 1 is FALSE, 2 is TRUE
c) Statement 1 & 2 TRUE
d) Statement 1 & 2 FALSE
View Answer

Answer: d