Guru Tegh Bahadur Institute of Technology

Department of Electronics and Communication

**Question bank**

**Control System lab**

1. [What is frequency response?](http://ececlassnotes.com/what-is-frequency-response/)
2. [List out the different frequency domain specifications?](http://ececlassnotes.com/list-different-frequency-domain-specifications/)
3. [Define –resonant Peak (Γr)?](http://ececlassnotes.com/define-resonant-peak-tr/)
4. [Define –Resonant frequency (Γf)?](http://ececlassnotes.com/define-resonant-frequencytf/)
5. [What is bandwidth?](http://ececlassnotes.com/what-is-bandwidth/)
6. [Define Cut-off rate?](http://ececlassnotes.com/define-cut-off-rate/)
7. [Define –Gain Margin?](http://ececlassnotes.com/define-gain-margin/)
8. [Define Phase cross over?](http://ececlassnotes.com/define-phase-cross-over/)
9. [What is phase margin?](http://ececlassnotes.com/what-is-phase-margin/)
10. [What is a Compensator?](http://ececlassnotes.com/what-is-a-compensator/)
11. [Define Gain cross over?](http://ececlassnotes.com/define-gain-cross-over/)
12. [What is Bode plot?](http://ececlassnotes.com/what-is-bode-plot/)
13. [What are the main advantages of Bode plot?](http://ececlassnotes.com/what-are-the-main-advantages-of-bode-plot/)
14. [Define Corner frequency?](http://ececlassnotes.com/define-corner-frequency/)
15. [Define Phase lag and phase lead?](http://ececlassnotes.com/define-phase-and-lag-phase-lead/)
16. [What are M circles?](http://ececlassnotes.com/what-are-m-circles/)
17. [What is Nichols chart?](http://ececlassnotes.com/what-is-nichols-chart/)
18. [What are two contours of Nichols chart?](http://ececlassnotes.com/what-are-two-contours-of-nichols-chart/)
19. [How is the Resonant Peak(Mr), resonant frequency(Wr ) , and band Width determined from Nichols chart?](http://ececlassnotes.com/how-is-the-resonant-peak-mr-resonant-frequency-wr-and-band-width-determined-from-nichols-chart/)
20. [What are the advantages of Nichols chart?](http://ececlassnotes.com/advantages-nichols-chart/)
21. [What are the two types of compensation?](http://ececlassnotes.com/two-types-compensation/)
22. [What are the three types of compensators?](http://ececlassnotes.com/three-types-compensators/)
23. [What are the uses of lead compensator?](http://ececlassnotes.com/uses-lead-compensator/)
24. [What is the use of lag compensator?](http://ececlassnotes.com/use-lag-compensator/)
25. [When lag lead compensator is is required?](http://ececlassnotes.com/lag-lead-compensator-required/)
26. [What is nyquist contour?](http://ececlassnotes.com/what-is-nyquist-contour/)
27. [State Nyquist stability criterion.](http://ececlassnotes.com/state-nyquist-stability-criterion/)
28. [Define Relative stability](http://ececlassnotes.com/define-relative-stability/)
29. [What are the two segments of Nyquist contour?](http://ececlassnotes.com/two-segments-nyquist-contour/)
30. [What are root loci?](http://ececlassnotes.com/what-are-root-loci/)
31. [What is a dominant pole?](http://ececlassnotes.com/what-is-a-dominant-pole/)
32. [What is the main significance of root locus?](http://ececlassnotes.com/main-significance-root-locus/)
33. [What are the effects of adding a zero to a system?](http://ececlassnotes.com/effect-adding-zero-system/)
34. [What are N circles?](http://ececlassnotes.com/what-are-n-circles/)
35. [What is control system?](http://ececlassnotes.com/what-is-control-system/)
36. [What are the two major types of control system?](http://ececlassnotes.com/two-major-types-control-system/)
37. [Define open loop control system?](http://ececlassnotes.com/define-open-loop-control-system/)
38. [Define closed loop control system?](http://ececlassnotes.com/define-closed-loop-control-system/)
39. [What are the components of feedback control system?](http://ececlassnotes.com/components-feedback-control-system/)
40. [Define transfer function.](http://ececlassnotes.com/define-transfer-function/)
41. [What are the basic elements used for modeling mechanical translational system.](http://ececlassnotes.com/basic-elements-used-modeling-mechanical-translational-system/)
42. [What are the basic elements used for modeling mechanical rotational system?](http://ececlassnotes.com/basic-elements-used-modeling-mechanical-rotational-system/)
43. [Name two types of electrical analogous for mechanical system.](http://ececlassnotes.com/name-two-types-electrical-analogous-mechanical-system/)
44. [What is block diagram?](http://ececlassnotes.com/what-is-block-diagram/)
45. [What is the basis for framing the rules of block diagram reduction technique?](http://ececlassnotes.com/basis-framing-rules-block-diagram-reduction-technique/)
46. [What is a signal flow graph?](http://ececlassnotes.com/signal-flow-graph/)
47. [What is transmittance?](http://ececlassnotes.com/what-is-transmittance/)
48. [What is sink and source?](http://ececlassnotes.com/what-is-sink-and-source/)
49. [Define non touching loop](http://ececlassnotes.com/define-non-touching-loop/)
50. [Write Masons Gain formula.](http://ececlassnotes.com/write-masons-gain-formula/)
51. [Write the analogous electrical elements in force voltage analogy for the elements of mechanical translational system.](http://ececlassnotes.com/analogous-electrical-elements-force-voltage-analogy-elements-mechanical-translational-system/)
52. [Write the analogous electrical elements in force current analogy for the elements of mechanical translational system.](http://ececlassnotes.com/analogous-electrical-elements-force-current-analogy-elements-mechanical-translational-system/)
53. [Write the force balance equation of an ideal mass element.](http://ececlassnotes.com/write-force-balance-equation-ideal-mass-element/)
54. [Write the force balance equation of ideal dashpot element.](http://ececlassnotes.com/write-force-balance-equation-ideal-dashpot-element/)

[55. Write the force balance equation of ideal spring element.](http://ececlassnotes.com/write-force-balance-equation-ideal-spring-element/)

1. Distinguish between open loop and closed loop system
2. [What is servomechanism?](http://ececlassnotes.com/what-is-servomechanism/)
3. [Why negative feedback is invariably preferred in closed loop system?](http://ececlassnotes.com/negative-feedback-invariably-preferred-closed-loop-system/)
4. [What is transient response?](http://ececlassnotes.com/what-is-transient-response/)
5. [What is steady state response?](http://ececlassnotes.com/steady-state-response/)
6. [What is an order of a system?](http://ececlassnotes.com/what-is-an-order-of-a-system/)
7. [Define Damping ratio](http://ececlassnotes.com/define-damping-ratio/).
8. [List the time domain specifications.](http://ececlassnotes.com/list-time-domain-specifications/)
9. [Define Delay time.](http://ececlassnotes.com/define-delay-time/)
10. [Define Rise time.](http://ececlassnotes.com/define-rise-time/)
11. [Define peak time.](http://ececlassnotes.com/define-peak-time/)
12. [Define peak overshoot.](http://ececlassnotes.com/define-peak-overshoot/)
13. [Define Settling time.](http://ececlassnotes.com/define-settling-time/)
14. [What is the need for a controller?](http://ececlassnotes.com/what-is-the-need-for-a-controller/)
15. [What are the different types of controllers?](http://ececlassnotes.com/what-are-the-different-types-of-controllers/)
16. [What is proportional controller?](http://ececlassnotes.com/what-is-proportional-controller/)
17. [What is PI controller?](http://ececlassnotes.com/what-is-pi-controller/)
18. [What is the significance of integral controller and derivative controller in a PID controller?](http://ececlassnotes.com/what-is-the-significance-of-integral-controller-and-derivative-controller-in-a-pid-controller/)
19. [Why derivative controller is not used in control systems?](http://ececlassnotes.com/why-derivative-controller-is-not-used-in-control-systems/)
20. [Define Steady state error.](http://ececlassnotes.com/define-steady-state-error/)
21. [What is the drawback of static coefficients?](http://ececlassnotes.com/what-is-the-drawback-of-static-coefficients/)
22. [What is step signal?](http://ececlassnotes.com/what-is-step-signal/)
23. [What is ramp signal?](http://ececlassnotes.com/what-is-ramp-signal/)
24. [What is a parabolic signal?](http://ececlassnotes.com/what-is-a-parabolic-signal/)
25. [What are the three constants associated with a steady state error?](http://ececlassnotes.com/what-are-the-three-constants-associated-with-a-steady-state-error/)
26. [What are the main advantages of generalised error co-efficient?](http://ececlassnotes.com/what-are-the-main-advantages-of-generalised-error-co-efficient/)
27. [What are the effects of adding a zero to a system?](http://ececlassnotes.com/what-are-the-eff%E2%80%A6zero-to-a-system/)
28. [State-Magnitude criterion.](http://ececlassnotes.com/state-magnitude-criterion/)
29. [State – Angle criterion.](http://ececlassnotes.com/state-angle-criterion/)
30. [What is a dominant pole?](http://ececlassnotes.com/what-is-a-dominant-pole-2/)
31. [What is stepper motor?](http://ececlassnotes.com/what-is-stepper-motor/)
32. [What is servomotor?](http://ececlassnotes.com/what-is-servomotor)
33. [Name the test signals used in control system](http://ececlassnotes.com/name-the-test-si%E2%80%A6n-control-system/)
34. [Define BIBO stability.](http://ececlassnotes.com/define-bibo-stability/)
35. [What is the necessary condition for stability.](http://ececlassnotes.com/what-is-the-nece%E2%80%A6on-for-stability/)
36. [What is the necessary and sufficient condition for stability.](http://ececlassnotes.com/what-is-the-necessary-and-sufficient-condition-for-stability/)
37. [What is quadrant symmetry?](http://ececlassnotes.com/what-is-quadrant-symmetry/)
38. [What is limitedly stable system?](http://ececlassnotes.com/what-is-limitedly-stable-system/)
39. [What is synchros?](http://ececlassnotes.com/what-is-synchro/)
40. [What are static error constants.](http://ececlassnotes.com/what-are-static-error-constants/)
41. [What is the disadvantage in proportional controller?](http://ececlassnotes.com/what-is-the-disadvantage-in-proportional-controller/)
42. [What is the effect of PD controller on system performance?](http://ececlassnotes.com/what-is-the-effect-of-pd-controller-on-system-performance/)
43. [Why derivative controller is not used in control system?](http://ececlassnotes.com/why-derivative-controller-is-not-used-in-control-system/)
44. [What is the effect of PI controller on the system performance?](http://ececlassnotes.com/what-is-the-effect-of-pi-controller-on-the-system-performance/)
45. . [What is PD controller?](http://ececlassnotes.com/what-is-pd-controller/)