SNS COLLEGE OF TECHNOLOGY
(An Autonomous Institution)

DEPARTMENT OF BIOMEDICAL ENGINEERING

19BMT301- Biocontrol Systems

2 Marks QB:

1. Compare open loop and closed loop system.
2. State the basic elements for modelling in translational and rotational systems.
3. State "transfer function "of a system.
4. What is the difference between AC servo motor and two phase Induction motor?
5. Define Feedback element.
6. Name the basic elements of control systems.
7. Write Mason's gain formula.
8. What are the properties of Signal Flow Graph?
9. Why negative feedback is preferred in control systems?
10. What is time variant and time invariant systems?
11. List the analogous quantities in Force voltage analogy.
12. Describe the rule for moving a summing point ahead of a block.
13. What do you mean by Synchros?
14. State the principle of superposition and homogeneity.
15. Write the force balance equation of ideal mass, dashpot and spring element.
16. What is block diagram? What are the basic components of block diagram?
17. What is time response?
18. What is transient and steady state response?
19. What is the importance of test signals?
20. Name the test signals used in control system.
21. Define Step signal.
22. Define Ramp signal.
23. Define parabolic signal.
24. What is an impulse signal?

25. What is the order of a system?
26. Define Damping ratio.
27. How the system is classified depending on the value of damping?
28. Sketch the response of a second order under damped system.
29. List the time domain specifications:
30. Define Delay time.
31. Define rise time.
32. Define Peak time.
33. Define Peak overshoot.
34. Define settling time.
35. What is type number of a system? What is its significance?
36. What is steady state error?
37. Define static error constants.
38. What are generalized error coefficients?
39. Define BIBO Stability.
40. What is characteristic equation?
41. How the roots of characteristic equation are related to stability?
42. What is the necessary condition for stability?
43. What is Routh stability condition?
44. What is root locus?
45. How will you find root locus on real axis?
46. What is centroid and how it is calculated?
47. What is frequency response?
48. What are advantages of frequency response analysis?
49. What are frequency domain specifications?
50. Define Resonant Peak.
51. What is resonant frequency?
52. Define Bandwidth.
53. What is cut-off frequency and cut-off rate?
54. Define gain margin.
55. Define phase margin.

56. What is phase and Gain cross-over frequency?
57. What is Bode plot?
58. Define corner frequency.
59. What are the advantages of Bode Plot?
60. Distinguish distributed parameter and lumped parameter models.
61. Draw the simple electrical model of lung.
62. Draw the simple model of eye movement.
63. What is the need for physiological modeling?
64. What is the electrical equivalent of inheritance and compliance?
65. Draw the simple electrical model of heart.
66. Draw the linear model of neuromuscular reflex.
67. Mention the need for physiological modeling.
68. State Pupillary light reflex.
69. State knee jerk reflex.
70. Define autonomic nervous system.
71. Define muscle spindle.
72. Mention the function of cardiovascular control system.
73. State the process of respiration.
74. What is the function of gas exchanger in regulation of ventilation?
75. Draw the simple electrical model of cardiac output regulation.