Quiz # 01[B]

Course Title: Linear Control System (EE-321) Date: Feb. 05, 2020

Semester & Section: \_6th Course Teacher:\_Dr. Imran Khan\_\_\_\_\_\_

Total Marks: \_\_\_\_\_\_30\_\_\_\_\_\_\_\_\_\_\_\_\_ Time: \_\_\_\_\_\_20 Minutes\_\_\_\_\_\_\_\_\_\_\_\_\_

**Student Name**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Reg No**.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Instructions:**

1. Manage your answers in the provided space and be neat and precise.
2. Do any solutions and rough work on the blank side of this paper.
3. Execution of any forbidden actions during the exam will result in your quiz cancellation.
4. Choose only one option. Cutting not allowed.
5. Total time: 20 minutes.

**Q. No. 1.** Identify the most suitable word for the blank spaces? Marks: 5. CLO: 01, PLO: 01

1. In a transfer function the order of denominator polynomial is equal to…..
2. Order of the differential equation
3. Number of inputs.
4. Number of dependent variables
5. None of these
6. Damping in mechanical systems is…...
7. Directly proportional to the velocity of the mass.
8. Inversely proportional to the velocity of the mass.
9. Equal to the velocity of the mass.
10. Proportional to the position of the mass.
11. The basic law/s for modeling an RLC circuit are…. .
	1. KVL b. KCL c. Ohm's law d. All of these
12. Laplace Transform of $f\left(t\right)=2u\left(t\right)=$……, where $u(t)$ is a step function?
	1. 2 b. 2s c. 2/s d. 1/s
13. Mathematical models of physical systems are useful for ?
	1. Analyzing the system behavior
	2. Designing a control system
	3. Reducing the cost and effort in control system design
	4. All of these

**Q. No. 2.** Investigate the solution $x(t)$ of the following differential equation using Laplace Trans-

form,

$$\ddot{x}\left(t\right)+3\dot{x}\left(t\right)+2x\left(t\right)=0$$

with $x\left(0\right)=a$ and $\dot{x}\left(0\right)=b$, where a and b are constants? Marks: 10. CLO: 01, PLO: 01

**Q. No. 3.** Find the model which best represent the dynamics shown in the Figure below?

 Marks: 15. CLO: 01, PLO: 01

