

- Q.25 Write the concept of limit cycle
- Q.26 Write a short note on multi loop control system
- Q.27 Write any five application of robotics
- Q.28 Describe the concept of degree of freedom
- Q.29 Write five differences between open and closed loop control system
- Q.30 Explain any two non-linearities with diagram
- Q.31 Write a short note on computer applications in control system
- Q.32 Write five differences between feedback and feedforward control system
- Q.33 Explain the concept of Artificial Neural Network
- Q.34 Describe the principle of superposition and homogeneity
- Q.35 Explain single loop flow control system

#### SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Define Fuzzy Logic. Draw and explain the block diagram of Fuzzy Logic.
- Q.37 Describe the concept of cascade control system. Also write two advantages of it.
- Q.38 Write eight differences between linear and nonlinear control system.

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#### 4th Sem / IC Subject:- Advanced Control System

Time : 3Hrs.

M.M. : 100

#### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Ratio control is extensively used in  
a) Distillation column b) Chemical processes  
c) Reactor d) All of these
- Q.2 In control system non-linearity caused by gear train is  
a) Backlash b) Coulomb friction  
c) Saturation d) Resolution
- Q.3 The human brain is made up of processing units known as  
a) Networks b) Locus  
c) Neurons d) None of these
- Q.4 The software used for PLC Programming is  
a) Rs Logix b) Root locus  
c) Bode plot d) Pascal

- Q.5 A controller essentially is a
- Sensor
  - Clipper
  - Amplifier
  - Comparator
- Q.6 Lab VIEW is commonly used for
- data acquisition
  - industrial automation
  - control or monitoring a process
  - All of the above
- Q.7 Which term is not related to Neural Networks
- robotics
  - neurons
  - synapses
  - dendrites
- Q.8 Multiloop control is well illustrated in
- cascade control
  - ratio control
  - Split range control
  - All of these
- Q.9 There are two loops in a cascade control, one is called as inner loop other is known as
- feedback loop
  - feedforward loop
  - double loop
  - outer loop
- Q.10 Fuzzy Set theory defines fuzzy operators. Choose the fuzzy operators from the following
- AND
  - OR
  - NOT
  - All are Correct

## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Expand ANN
- Q.12 Write two advantages of cascade control system
- Q.13 Saturation relates to non linear control system (True/False)
- Q.14 Game playing is an application of \_\_\_\_\_
- Q.15 Define friction
- Q.16 Write two application of robotics
- Q.17 Name two computational software
- Q.18 Voice recognition is an example of \_\_\_\_\_
- Q.19 Define dead zone
- Q.20 Write two applications of Artificial Intelligence

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Explain ratio control system with the help of an example
- Q.22 Explain the concept of inherent and intentional non linearity
- Q.23 Explain briefly about the artificial intelligence.
- Q.24 Briefly explain any one computational software