

- Q.26 Explain the concept of artificial intelligence.
  - Q.27 Write five differences between open and closed loop control system.
  - Q.28 Explain any two types of non-linearities in control system.
  - Q.29 Write a short note on Robotics.
  - Q.30 Write a short note on computer applications in control system.
  - Q.31 Describe the concept of linear control system.
  - Q.32 Write five applications of artificial neural network.
  - Q.33 Describe the concept of degree of freedom.
  - Q.34 Write five differences between linear and nonlinear control system.
  - Q.35 Describe the concept of Neuro Fuzzy Logic Control System.

## **SECTION-D**

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Write eight differences between feedback and feedforward control system.

Q.37 Describe the concept of cascade control system. Also write two advantages of it.

Q.38 Explain the concept of Fuzzy Logic. Also write five application of Fuzzy Logic 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 The Load variable is also known as

  - a) Input variable      b) output variable
  - c) Disturbance      d) None of these

Q.2 The final control element is called a

  - a) Sensor      b) Controller
  - c) Actuator      d) All are correct

Q.3 Laplace transform of unit step input  $u(t)>0$  is

  - a)  $1/s$       b) 1
  - c)  $1/S^2$       d) All are correct

Q.4 In cascade control system which loop is fast

  - a) Outer-loop      b) Inner-loop
  - c) both a& b      d) None of these

Q.5 Neural networks are complex \_\_\_\_\_ with many parameters

  - a) Linear functions      b) Nonlinear function
  - c) Discrete functions      d) Exponential functions

- Q6** AI stands for  
a) Artificial intelligence  
b) Air craft intelligence  
c) Artificial internet  
d) Air craft internet
- Q7** Which of the following is not a part of Fuzzy Logic system architecture  
a) Fuzzification module  
b) Knowledge base  
c) De-fuzzification module  
d) Amplifier
- Q8** Feedback control system measure the  
a) Manipulated variable  
b) Control variable  
c) Load variable  
d) All of these
- Q9** Smallest change of input is known as  
a) resolution                  b) Sensitivity  
c) Precision                  d) None of these
- Q10** Lab-view software is design by  
a) National instrument b) general electric  
c) Infosys                  d) None of these

## **SECTION-B**

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 SCADA stands for  
Q.12 In cascade control system number of loop is \_\_\_\_\_  
Q.13 PLC stands for  
Q.14 Manipulated Variable is also known as  
Q.15 What is Back-lash  
Q.16 What is non-linearity  
Q.17 Backlash relates to linear system (True/False)  
Q.18 Write two applications of Robotics.  
Q.19 Define saturation.  
Q.20 Expand AI.

## **SECTION-C**

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Describe the principle of superposition and homogeneity.  
Q.22 Describe ratio control system with the help of an application.  
Q.23 Write a short note on SCADA software.  
Q.24 Explain classification of non-linearity.  
Q.25 Write five differences between open and closed loop control system.