Q.29 Explain split range control system with the help of an example.

Q.30 Write any one application of feedforward control system

Q.31 Explain the concept of degree of freedom

Q.32 Write five differences between linear and nonlinear control system

Q.33 Explain any two nonlinearities in control system

Q.34 Explain the concept of jump resonance with the help of diagram

Q.35 Write five applications of robotics

SECTION-D

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

Q.36 Explain the computational softwares used in the field of instrumentation and control

Q.37 Describe the concept of ratio control system with the help of an example

Q.38 Write eight differences between open and closed loop control system

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4th Sem / Instrumentation & Control Engg.

Subject:- Advanced Control System

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Artificial Intelligence has its expansion in the following application.

a) Planning and Scheduling
b) Game playing
c) Robotics
d) All of the above

Q.2 MATLAB is used for

a) Analyze data
b) Develop algorithms
c) Matrix manipulations
d) All are correct

Q.3 Which part of robot provides motion to the manipulator and end-effector

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

Q.4 Neural Networks are complex _____with many parameters.

a) Linear Functions b) Nonlinear Functions
c) Discrete Functions d) Exponential Functions

Q.5 MATLAB is the known as
a) Matrix Laboratory b) Mathematics
c) Material Science d) None of these

Q.6 In an open loop control system
a) Feedback is present
b) Feedback is absent
c) Error detector is present
d) None of these

Q.7 Limit cycle is a behavior shown by
a) Linear system b) Non linear system
c) Signal flow graph d) Block diagram

Q.8 Applications of robotics are
a) Assembling b) dismantling
c) Welding d) All of these

Q.9 Following are robotic arm configuration
a) Cartesian b) Cylindrical
c) Spherical d) All of these

Q.10 Accurate and reliable output is possible with which of the following system
a) Open loop control system
b) Closed loop control system
c) Both 1 and 2
d) None of these

SECTION-B

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

Q.11 Expand AI

Q.12 Write two applications of Fuzzy Logic

Q.13 Define feedback

Q.14 Block diagram of cascade control has three loops. (True/False)

Q.15 Expand ANN

Q.16 Name two computational software

Q.17 Define hysteresis

Q.18 Neuro-fuzzy system is combination of_____

Q.19 Write two applications of artificial intelligence

Q.20 Write two examples of multi loop control system

SECTION-C

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

Q.21 Explain the concept of Fuzzy Logic Control System

Q.22 Write a short note on SCADA software

Q.23 Explain classification of nonlinearities

Q.24 Write five differences between feedback and feedforward control system

Q.25 Tell five advantages of cascade control system

Q.26 Write a short note on Multiloop control system

Q.27 Explain the concept of Artificial intelligence

Q.28 Write five applications of Artificial Neural Network