Q.23 Why PI controller is used over PID? (CO2)
Q.24 Explain PID controller with block diagram. (CO2)
Q.25 Explain the Ramp and Step Functions. (CO2)
Q.26 What are limitations of PID controller. (CO2)
Q.27 Explain the difference between DSB-SC and SSB-SC. (CO4)
Q.28 What are Piston valves? Where are they used? (CO3)
Q.29 What are diaphragm valve? Menton internal parts of diaphragm valve? (CO3)
Q.30 Define Modulation? What is the need of modulation? (CO4)
Q.31 Explain the difference between ASK and FSK. (CO4)
Q.32 Define Vestigial Side Band. Why is it Preferred? (CO4)
Q.33 Explain the working of Control valve? (CO3)
Q.34 What is spread spectrum. Explain its characteristics. (Co4)
Q.35 Explain ASK with its block diagram. (CO4)

SECTION-D

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

Q.36 Explain block diagram of AM transmitter and Receiver. (CO4)
Q.37 Explain the difference between Analog and digital Communication. (CO4)
Q.38 Explain construction and working of Solenoid valves. (CO3)

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5th Sem / Branch : Mechatronics
Sub.: Process Control & Data Communication

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 What is control system? (CO1)
a) Control system is a system in which the output is controlled by varying the input
b) Control system is a device that will not manage or regulate the behaviour of other devices using control loops
c) Control system is a feedback system that can be both positive and negative
d) Control System is a system in which the input is controlled by varying the output

Q.2 Which of the following element is not used in an automatic control system? (CO1)
a) final control element
b) Sensor
c) Oscillator
d) Error detector

Q.3 In open loop system (CO1)
a) The control action depends on the size of the system

b) The control action depends on system variables
c) The control action depends on the input signal
d) The control action is independent of the output

Q.4 What is the value of u(I)where u(n) is the unit step function? (CO2)
a) 1 b) 0.5
c) 0 d) -1

Q.5 Which of the following is a correct statement (CO2)
a) PI controller improves steady state response
b) PD controller improves transient response
c) Both A & B
d) None of these

Q.6 What happens to the magnetic field in the solenoid when the number of turns increases? (CO3)
a) Increases b) Decreases
c) Remains constant d) Becomes zero

Q.7 What is Valve Positioner (CO3)
a) Take the place of cascade system
b) Provides more precise valve position
c) Make a pneumatic controller in necessary
d) Provides a remote indication of valve position

Q.8 Modulating wave can also be known as _____ (CO4)
a) Total wave b) Measuring wave
c) Super wave d) Incubation wave

Q.9 QPSK has _____ the bandwidth efficiency of BPSK. (CO4)
a) Twice b) Same
c) Half d) Four times

Q.10 In television system, VSB Modulation I preferred to (CO4)
a) Simplify generation
b) Enable demodulation using an envelope detector
c) Save on bandwidth
d) Simplify generation and enable demodulation using a enable detector

SECTION-B

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

Q.11 What is time Variant system. (CO1)
Q.12 Give one example of closed loop system. (CO1)
Q.13 PI Stands for (CO2)
Q.14 Define Ramp Function. (CO2)
Q.15 What is the function of solenoid valve? (CO3)
Q.16 What is the function of control valve. (CO3)
Q.17 Range of VHF is _____ (CO4)
Q.18 VSB stands _____ (CO4)
Q.19 In fast frequency hopping rate is less than the information symbol rate. (CO4)
a) True b) False
Q.20 DSB-SC stands for. (CO4)

SECTION-C

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

Q.21 What is the difference between continuous and discrete time control system.
Q.22 List the comparison between open loop and closed loop system. (CO1)