Q.25 Explain the frequency discrimination method of SSBSC generation. (CO5)
Q.26 What are limitations of PID Controller. (CO2)
Q.27 What are the main benefits of DSB-SC (CO4)
Q.28 What are the advantages of diaphragm valve? (CO3)
Q.29 How many types of piston valves are there? (CO3)
Q.30 Explain the difference between ASK and PSK. (CO4)
Q.31 Define Vestigal Side Band. Why is it preferred.? (CO4)
Q.32 Explain the working of Control valve? (CO3)
Q.33 What is Spread Spectrum. Explain types of Spread spectrum techniques. (CO4)
Q.34 Define modulation? What is the need of modulation? (CO4)
Q.35 Explain ASK Modulator with the help of its waveforms. (CO4)

SECTION-D

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

Q.36 Explain the difference between Analog and digital communication. (CO4)
Q.37 What are different digital Modulation techniques? Also compare them. (CO3)
Q.38 Explain QPSK with its block diagram (CO4)

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5th Sem / Mechatronics
Subject:- Process Control and Data Communication

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 The output of the feedback control system must be a function of_____ (CO1)
a) Output and feedback signal
b) Input and feedback signal
c) Reference input
d) Reference output

Q.2 The useful power is amplitude modulation is carried by (CO2)
a) Sided Bands b) Carriers
c) Signals d) None of these

Q.3 In closed loop control system, with positive value of feedback gain the overall gain of the system will (CO1)
a) Decrease b) Increase
c) be unaffected d) None of the mentioned

Q.4 The function of this elements is to be manipulate the signal presented to it preserving the original nature of the signal (CO1)

a) Data presentation element
b) Variable conversion element
c) Primary manipulation element
d) Variable Manipulation element

Q.5 A process control system consists of_____ (CO2)
a) 10 elements b) 6 elements
c) 2 elements d) 4 elements

Q.6 The magnetic field strength of a solenoid can be increased by inserting which of the following materials as the core? (CO3)
a) Copper b) Silver
c) Iron C d) Aluminium

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

Q.8 Frequency hopping involves a periodic change of transmission_____ (CO4)
a) Signal b) Frequency
c) Phase d) Amplitude

Q.9 _____ is type of digital Modulation (CO4)
a) Amplitude Modulation
b) Frequency Modulation
c) Phase Modulation
d) Frequency shifting Key

Q.10 Which of the following is constant in the case of frequency modulation? (CO4)
a) Modulation b) Wavelength
c) Amplitude d) Frequency

SECTION-B

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

Q.11 What is time invariant System. (CO1)
Q.12 Give one example of open loop system (CO1)
Q.13 PID stands for (CO2)
Q.14 Define Step Function (CO2)
Q.15 What is solenoid. (CO3)
Q.16 What is the function of piston in IC engine (CO3)
Q.17 Range of MF is_____ (CO4)
Q.18 PSK stands for_____ (CO4)
Q.19 FH system do not have collisions.(True/False) (CO4)
Q.20 SSB stands for_____. (CO4)

SECTION-C

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

Q.21 What is difference between time varying and time invariant system (CO1)
Q.22 Define Control System and its basic elements. (CO1)
Q.23 What does a PD controller do? (CO2)
Q.24 Explain PID controller with block diagram. (CO2)