Q.26 Show how on-off control works in control systems? (CO2)

Q.27 Draw the block diagram of a basic control system. Label all parts. (CO1)

Q.28 Define modulation why it is needed? (CO4)

Q.29 Show how power is distributed in A.M. wave. (CO4)

Q.30 Briefly compare A.M. with F.M. (CO4)

Q.31 What is function of limiter in demodulation of FM? (CO4)

Q.32 Draw & Explain the working of F.M. Transmitter? (CO4)

Q.33 What are spread spectrum techniques explain in brief. (CO4)

Q.34 Draw & explain the block diagram of super heterodyne receivers. (CO4)

Q.35 Show how SSB is generated? (CO4)

Section-D

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

Q.36 With the help of examples. Differentiate between PD & PID Controllers. (CO2)

Q.37 i) Write a short note on solenoid valves. (5) (CO3)

ii) Explain in brief the Pre-emphasis & de-emphasis. (5) (CO4)

Q.38 Draw and explain the block diagram & working principle of ASK receiver. (CO4)

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5th Sem., Branch : Mechatronics
Subject : Process Control & Data Communication

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 In an open loop control system_____. (CO1)

a) Output is independent of control input
b) Output is dependent on control input
c) Only system parameters have effect on the control output
d) None of these

Q.2 In closed lopp control system, with positive value of feedback gain, the overall gain of the system will_____. (CO1)

a) Decrease b) Increase
c) Unaffected d) None

Q.3 A good control system has all the following features except_____. (CO1)

a) Good Stability
b) Slow Response
c) Good Accuracy
d) Sufficient power handling capacity

Q.4 A car is running at a constant speed of 40km/hr, which of the following will be the feedback element for the driver. (CO1)

a) Break padel
b) Eyes
c) Reading of speedometer
d) Steering wheel

Q.5 A Controller, essentially is a _____. (CO2)

a) Sensor b) Clipper
c) Comparator d) Aplifier

Q.6 PID means _____. (CO2)

a) Programmable integral device
b) Programmable integral derivative
c) Proportional Integral device
d) Proportional Integral derivative

Q.7 Height of antenna_____with modulation. (CO4)

a) Increases b) Decreases
c) Remains d) Unaffected

Q.8 Frequency range of LF is _____. (CO4)

a) 30-300 Hz b) 30-300 KHz
c) 30-300 MHz d) 30-300 GHz

Q.9 For SSB the band width is _____. (CO4)

a) Fm b) 2fm
c) 3fm d) fm/2

Q.10 A balanced modulator produces_____. (CO4)

a) DSB b) DSB-SC
c) SSB d) VSB

Section-B

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

Q.11 Expand the term VSB. (CO4)

Q.12 Give one example of closed loop system. (CO1)

Q.13 Define offset. (CO2)

Q.14 Open loop control system has feedback. (True/False) (CO1)

Q.15 Draw a ramp signal. (CO2)

Q.16 Expand PID. (CO2)

Q.17 Define Process variable. (CO2)

Q.18 Number of sidebands in FM are _____. (CO4)

Q.19 The Modulation index of A.M. ranges from _____to_____. (CO4)

Q.20 Write full form of QPSK. (CO4)

Section-C

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

Q.21 What happens when a step signal is applied to PD controller? (CO2)

Q.22 Explain in brief the main constituents of open loop system. (CO1)

Q.23 What are main advantages of PI controllers. (CO2)

Q.24 Explain in brief the working of piston operated value system. (CO3)

Q25 What are different characteristics of control valve? (CO3)