Q.28 Differentiate between continuous & discrete control systems. (CO-1)

Q.29 Compare SSB with VSB by showing diagrams. (CO-4)

Q.30 Why digital modulation is required? (CO-4)

Q.31 Explain in brief the block diagram of F.M. receivers. (CO-4)

Q.32 Define Sampling Theorem. Give its importance. (CO-4)

Q.33 What are Frequency hopping techniques, explain in brief. (CO-4)

Q.34 Draw & explain the block diagram of TRF A.M. receivers. (CO-4)

Q.35 Define ASK, explain its working. (CO-4)

SECTION-D

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

Q.36 With the help of examples, differentiate between PI & PD Controllers. (CO-2)

Q.37 i) Write a short note on Piston operated valves.(5) (CO-3)

ii) Compare features of A.M. & F.M. (5) (CO-4)

Q.38 Draw and explain the block diagram & working principle of generation of FSK. (CO-4)

(Note : Course outcome/CO is for office use only)

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Roll No. .....

5th Sem. / Mechatronics

Subject:- Process Control & Data Communication

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 PI Controllers are used primarily for ___ (CO-2)

a) To improve stability
b) To decrease the steady state error
c) To improve stability & decrease steady state error
d) None of these

Q.2 A control system in which the control action is dependent on output is known as _____ (CO-1)

a) Closed loop system
b) Open loop system
c) Semi closed loop system
d) None of these

Q.3 In closed loop system, with positive feedback, gain of system will _____ (CO-1)

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

Q.4 The initial response when the output is not equal to input is called _____ (CO-1)

a) Error response b) Dynamic response
c) Transient response d) Linear response

.5 Transfer function of a system is used to calculate _____ (CO-1)

a) Order of the system
b) Time constant
c) Output for given input
d) Steady state gain

Q.6 PD controller is a _____ filter. (CO-2)

a) High pass b) Low pass
c) Band pass d) Band stop

Q.7 In F.M., for a given frequency deviation, the modulation index varies _____ as the modulating frequency. (CO-4)

a) Directly b) Inversely
c) Independently d) None of these

Q.8 In A.M., the modulation index lies between _____ (CO-4)

a) -1 to 1 b) -1 to 0
c) 0 to 1 d) 1 to ¥

Q.9 In low level A.M. Transmitter, amplifier used after modulated stage is _____ (CO-4)

a) Class A b) Class B
c) Class C d) Class AB

Q.10 Quantization noise occurs in _____ (CO-4)

a) TDM b) FDM
c) AM d) PCM

SECTION-B

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

Q.11 Expand the term PSK. (CO-4)

Q.12 Give one example of Time varying system. (CO-1)

Q.13 Define Quantization. (CO-4)

Q.14 Define an open loop control system (CO-1)

Q.15 Draw a unit step signal. (CO-2)

Q.16 What is a valve? (CO-3)

Q.17 Define Process control. (CO-2)

Q.18 Draw a PWM wave. (CO-4)

Q.19 The modulation index of F.M. ranges from _____ to _____. (CO-4)

Q.20 Write full form of DSB-SC. (CO-4)

SECTION-C

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

Q.21 Show how time varying signal is different from time variant? (CO-1)

Q.22 Explain in brief the main component of closed loop system. (CO-1)

Q.23 What are main advantages & applications of PID controllers? (CO-2)

Q.24 Explain in brief the working of Diaphragm operated valve system. (CO-3)

Q.25 Explain in brief the concept of on-off ? (CO-2)

Q.26 Show how PD controller responds to a Ramp signal? (CO-2)

Q.27 Explain in brief the importance of Valve Positioners. (CO-3)