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6th Sem./Mechanical Engineering

Subject:- Mechatronics

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Which among the following carry out the overall control of a system? (CO1)
a) Graphical display b) Sensors
c) Actuators d) Digital controls

Q.2 Which among the following is a correct statement regarding "Mechatronic system"? (CO1)
a) Its initial cost of setup is low
b) Individual can operate the system
c) Cheaper maintenance
d) More output in less time

Q.3 The light emitting diodes are used as a/an_____(CO3)
a) Intelligence b) Display
c) Transducer d) Sensor

Q.4 What are the applications of PLC in mechatronics? (CO10)
a) Timing, Counting, logic, Arithmetic and Sequencing
b) Managing, Commanding aand directing
c) Storing data d) Processing

Q.5 What is the sequence followed by the automatic washing machine? (CO7)
a) Washing, soaking, rinsing and drying
b) Soaking, washing, rinsing and drying
c) Washing, soaking, drying and rinsing
d) Drying, soaking, rinsing and washing

Q.6 What is measured by a hall effect transducer? (CO2)
a) Electric flux b) Electric field
c) magnetic field d) temperature

Q.7 Which type of position can be determined by a position sensor? (CO2)
a) Mechanical position b) Lateral position
c) prone position d) Lithotomy position

Q.8 The compressed air flows to the actuator through _____ (CO4)
a) Pipes and valves b) Shafts
c) Motors d) Flow control valve

Q.9 Feature that distinguish microprocessor from micro-computer is. (CO7)
a) Exactly the same as the machine cycle time
b) Words are usually larger in microprocessor
c) Words are shorter in microprocessors
d) Microprocessor does not contain I/O devices

Q.10 What does RPM stand for? (CO5)
a) Revolution per milliseconds
b) Revolution per minute
c) Rotation per minute
d) Rotation per millisecond

SECTION-B

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

Q.11 Define accuracy. (CO2)

Q.12 Give an example of open loop control system.(CO1)

Q.13 Define ratary actuators. (CO4)

Q.14 Write two example of transducers. (CO2)

Q.15 What is a PLC? (CO10)

Q.16 Write principle of working of AC motor. (CO5)

Q.17 What do you mean by analogue output? (CO8)

Q.18 What is the used of input port? (CO9)

Q.19 Give two examples of mechanical actuators. (CO4)

Q.20 What is display in data presentation systems? (CO3)

SECTION-C

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

Q.21 State the disadvantages of mechatronics. (CO1)

Q.22 Explain any type of displacement sensor. (CO2)

Q.23 Describe an electromechanical transducer. (CO2)

Q.24 How do you select a sensor? (CO2)

Q.25 Write short note on data acquisition systems. (CO8)

Q.26 Describe uses of process control valves. (CO4)

Q.27 Give some applications of logic gates. (CO6)

Q.28 Explain boolean algebra . (CO6)

Q.29 Write short note on microprocessors. (CO7)

Q.30 Write basic structure of a PLC. (CO10)

Q.31 What is the importance of data handing ? (CO9)

Q.32 Give examples of interfacing. (CO9)

Q.33 What are the applications PLC? (CO10)

Q.34 Write short note on testing and calibration. (CO3)

Q.35 introduce data presentation systems. (CO3)

SECTION-D

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

Q.36 What is a AC Motor ? Explain its construction and working with the help of neat sketch. (CO5)

Q.37 Define transducer explain any two transducers with neat sketch. (CO2)

Q.38 Define micro controllers. explain its basic structure and applications. (CO7)