Q.18 Show how flow is measured by orifice plate? (CO3)

Q.19 Write any one method of level measurement. (CO3)

Q.20 Show how Pneumatic actuator works? (CO4)

Q.21 Write a short note on solenoids. (CO5)

Q.22 Explain in brief the concept of smart sensors. (CO5)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain in detail the principle & working of thermocouples. (CO3)

Q.24 Explain the construction and working principle of Bourdon tubes. (CO2)

Q.25 Show how Electric motors work? Write its applications. (CO4)

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4th Sem. / Automation & Robotics

Subject : Sensors and Actuators

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 The primary sensing element may be a (CO1)

a) Transducer

b) Data storage device

c) PMMC instrument

d) Signal conditioning

Q.2 Thermocouple consists of (CO3)

a) Two similar metals

b) Two dissimilar metals

c) Two dissimilar semiconductors

d) Two similar semiconductors

Q.3 Proximity sensors are used to_____ (CO2)

a) Non magnetic but conductive materials

b) Measure strain

c) Measure distance

d) Measure Temperature

Q.4 Which can not be detected by capacitive sensor? (CO1)

a) Level control

b) Small vessel pump control

c) Pollution detection

d) Metrology application

Q.5 The full form of LDR is_____ (CO3)

a) Light determinants resistor

b) Light dependent resistor

c) Luminous determinants resistor

d) Luminous determinants resistor

Q.6 The full form of NMR is_____ (CO5)

a) Nuclear magnetic resonator

b) Nuclei magnetic resonance

c) Nuclei magnetic resonance

d) Nuclear magnetic resonance

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define transducer. (CO1)

Q.8 Name any one application of proximity sensor. (CO2)

Q.9 What are materials used in thermocouples? (CO3)

Q.10 Define a linear actuator. (CO4)

Q.11 Give one example of nano sensor. (CO5)

Q.12 In sensor, expand the term MEMS? (CO5)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 How sensors are classified? (CO1)

Q.14 Explain basic principle of capacitive transducers. (CO1)

Q.15 Write a note on Diaphragm pressure sensor. (CO2)

Q.16 Explain basic principle of Inductive proximity sensors. (CO2)

Q.17 What is basic principle of Inductive transducer? (CO1)