Q.31 Draw and explain the circuit of temperature measurement by thermistor. (CO7)

Q.32 Explain in brief the black body concept. (CO7)

Q.33 Show how torque is measured? (CO4)

Q.34 Write any five advantages of electrical transducers. (CO2)

Q.35 Draw and explain in brief the principle and working of hygrometers. (CO8)

Section-D

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

Q.36 Explain in detail all the parts of a basic measuring system. (CO1)

Q.37 With the help of neat diagram, explain thermocouples. (CO7)

Q.38 Explain in detail the various speed measurement arrangements. (CO8)

Note : Course Outcome (CO) mentioned in the question paper is for official purpose only.

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4th Sem.
Branch: Eltx, Med Eltx., Mecatronics, Power Eltx
Sub : Instrumentation & Instrument Process Control

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 Potentiometer is _____transducer. (CO3)

a) Active b) Passive

Q.2 The Primary sensing element may be a (CO2)

a) Transducer b) Data storage device

c) PMMC instrument d) Signal conditioning

Q.3 Thermistors are used for measurement of _____(CO7)

a) Displacement b) Temperature

c) pH d) Pressure

Q.4 Displacement is measured by _____ (CO3)

a) Potentiometer b) LVDT

c) Both A & B d) None of these

Q.5 pH of bases is _____ (CO8)

a) ZERO b) 7

c) >7 d) <7

Q.6 The humidity is expressed in _____ (CO8)

a) Decibels b) Volts

c) Percentage d) Ohms

Q.7 Turning moment of a force about an axis is called_____. (CO4)

a) Momentum b) Torque

c) Acceleration d) Velocity

Q.8 Tachometer is used to measure_____. (CO4)

a) Strain b) Flow

c) Speed d) Torque

Q.9 Germanium is a piezo-electric material. (CO2)

a) True b) False

Q.10 Pyrometers are used for measurement of _____(CO7)

a) Force b) Strain

c) Temperature d) Torque

Section-B

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

Q.11 Define Measurand. (CO1)

Q.12 What is an secondary transducer? (CO2)

Q.13 Define error. (CO1)

Q.14 What is use of bellows. (CO5)

Q.15 What are units of torque. (CO4)

Q.16 Give full form of LED. (CO1)

Q.17 Define inductance. (CO2)

Q.18 Manometers are used for measurement of _____(CO5)

Q.19 Give one example of capacity transducer. (CO2)

Q.20 Load cell converts_____ into electrical signal. (CO4)

Section-C

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

Q.21 Define inverse transducer, give an example to explain this. (CO2)

Q.22 Explain Hall effect transducers. (CO2)

Q.23 How can we measure displacement by Inductive transducers? (CO3)

Q.24 Define piezoelectric effect, show how transducers work on this principle? (CO2)

Q25 What is operating principle of ultrasonic flow meter? (CO6)

Q.26 Define Gauge factor, explain its significance. (CO3)

Q.27 Explain in brief the working of resistance strain gauge. (CO3)

Q.28 Explain how resistance thermometer works? (CO7)

Q.29 Show how pH is measured? (CO8)

Q.30 Explain working of load cell. (CO5)