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5th Sem / Elect, Eltx
Subject:- Instrumentation

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Ratio of per unit change in resistance to per unit change in length is called (CO1)

a) young modulus b) proximity
c) gauge factor d) pH factor

Q.2 Transducer consists of (CO1)

a) Sensing element
b) Transudation element
c) Both a and b
d) none of the above

Q.3 Gallium Arsenide phosphide LED emits (CO1)

a) yellow light b) Blue light
c) red light d) White light

Q.4 Force is measured by (CO1)

a) Direct method b) Indirect method
c) Both a and b d) None of the above

Q.5 Inductive transducer works on the principle of (CO3)

a) Electrical generator
b) mechanical generator
c) Magnetic field
d) all of the above

Q.6 LVDT can be used to measure (CO4)

a) Force b) Pressure
c) displacement d) all of the above

Q.7 In parallel plate capacitor $C = \epsilon A/d$, ϵ is givem as (CO4)

a) permittivity b) Permeance
c) permeability d) Reluctance

Q.8 Doppler type ultrasonic flow meter measures flow in _____ direction (CO4)

a) forward b) Reverse
c) both a and b d) none of these

Q.9 Thermocouple works on the principle of _____ (CO4)

a) electromagnetic induction
b) seebeck effect
c) frontier
d) doppler effect

Q.10 Thermopile coverts thermal energy into_____(CO4)

a) Mechanical energy b) electrical energy
c) light energy d) motional energy

SECTION-B

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

Q.11 Load cell converts _____ into an electrical signal. (CO3)

Q.12 LVDT is an active inductor transducer. (True/False) (CO3)

Q.13 Name any device to measure torque. (CO3)

Q.14 What is a thermopile? (CO4)

Q.15 Name materials used to make piezoelectric material. (CO3)

Q.16 What are active transducers? (CO1)

Q.17 Give applications of stroboscope. (CO3)

Q.18 Expand pH. (CO1)

Q.19 What do you mean by negative temperature coefficient? (CO5)

Q.20 Define error in measurement. (CO1)

SECTION-C

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

Q.21 Give benefits and limitations of using LVDT. (CO3)

Q.22 Explain the working of AC tachometer. (CO3)

Q.23 Explain the working of strain gauge torque meter. (CO3)

Q.24 List disadvantages of manometers. (CO4)

Q.25 Give the working of Platinum resistance thermometer. (CO4)

Q.26 Define pyrometry. What is its principle of operation? (CO4)

Q.27 Give applications of pH measurement. (CO4)

Q.28 Write a short note on (CO1)
a) Relative humidity b) saturation

Q.29 Explain various parts of vapour pressure thermometers. (CO4)

Q.30 What are limitations of ultrasonic flow meter? (CO1)

Q.31 How Pirani gauge is used to measure pressure? (C41)

Q.32 Explain working of U-tube manometer using diagram. (CO4)

Q.33 Explain the working of U-tube manometer using diagram. (CO4)

Q.34 List the factors that determine the choice of a transducer. (CO1)

Q.35 Explain DC Signal conditioning system using block diagram. (CO3)

SECTION-D

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

Q.36 Explain the construction, working and applications of LVDT. (CO3)

Q.37 Write construction, working principle and applications of thermistors. (CO4)

Q.38 Explain the working of capacitive level indicator Advantages, disadvantages. (CO4)