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4th Sem / Branch : Elect.Engg., Power Station Engg., Elect & Eltx. Engg.

Subject:- Instrumentation

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 _____Converts mechanical displacement into electrical signals.

a) LVDT b) anemometer
c) thermometer d) strain gauge

Q.2 LCD stands for _____

a) liquid crystal display
b) liquid clear display
c) logical crystal display
d) liquid crystalline display

Q.3 What is the full form of RTD ?

a) resistance time damper
b) resistance temperature detector
c) resistive temperature diode
d) ratio of time difference

Q.4 Which of the following can measure the pressure directly ?

a) LVDT b) strain gauge
c) rotameter d) bourdan tube

Q.5 Piezoelectric effect is when materials produce electric charges when _____

a) voltage is applied
b) mechanical stress is applied
c) electric field is applied
d) magnetic field is applied

Q.6 Piezoelectricity means _____

a) electric polarization b) electric dielectric
c) pressure electricity d) polar dieletric

Q.7 In an electric vehicle, a _____ displays speed of vehicle.

a) speedometer b) barometer
c) magnetometer d) None of the above

Q.8 Which of the following is a feature of a dynamometer ?

a) it can measure torque
b) it can measure frictional resistance
c) it can measure balancing force
d) it can act as speedometer

Q.9 What is the formula of gauge factor ?

a) $(\triangle R/R)/(\triangle L/L)$ b) $(\triangle R/R^2)/(\triangle L/L^2)$
c) $(\triangle R/\triangle L)$ d) None of the above

Q.10 Optical Pyrometer is generally used to measure _____

a) low pressure b) high temperature
c) low temperature d) high pressure

SECTION-B

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

Q.11 What is the full forms of LVDT ?

Q.12 Force is defined as product of ___ and ____

Q.13 Name two methods used for measurement of flow .

Q.14 Define ph level .

Q.15 Give disadvantages of analog instruments .

Q.16 Give any example of active transducer .

Q.17 Explain relative humidity .

Q.18 Define load cell ?

Q.19 State Hall Effect ?

Q.20 List any two display devices ?

SECTION-C

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

Q.21 Draw and explain block diagram of basic measuring system .

Q.22 Write two advantages of electrical transducer ?

Q.23 What are uses of piezo electric type transducer ?

Q.24 Write a short note on "Strain guage amplifiers".

Q.25 Write a short note on "Tachometer"

Q.26 What are the applications of electrical pressure pick-ups ?

Q.27 Write a short note on "Pressure cells".

Q.28 What are the applications of thermocouples ?

Q.29 Explain the methods for measurement of humidity ?

Q.30 Discuss the different methods for measuring torque .

Q.31 What are the disadvantages of LVDT ?

Q.32 What are different methods for measurement of speed ?

Q.33 Discuss the working of temperature recorders".

Q.34 How thermistor is used for temperature measurement ?

Q.35 Why PH measurement is required ?

SECTION-D

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

Q.36 Explain different methods of Pressure measurement?

Q.37 Explain working and principle of LVDT . Also give its advantages and applications.

Q.38 How the pressure is measured by using Bourdon tube. Give its advantages and disadvantages ?