Q.17 Write down any four selection criteria of transducers.

Q.18 Write down any two advantages and disadvantages of potentiometer.

Q.19 Write down any four differences between RTD and thermistor.

Q.20 Explain the working of seismic pickup. Write any two applications of it.

Q.21 Explain the construction details and working principle of capacitive transducer.

Q.22 What is hot wire anemometer? How does it work?

SECTION-D

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

Q.23 What are the different types of temperature sensor? Explain the working of RTD using diagram. Write down the advantages and disadvantages of it.

Q.24 Define sensor. Write few examples of it. What are the difference between sensor and transducer? Is it correct to say that transducer is the part of sensor?

Q.25 Draw the diagram of RVDT. Explain its working. How it is different from LVDT? Write down its advantages.

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3rd Sem / Instrumentation and Control

Subject:- Sensors and Transducers

Time : 3Hrs. M.M. : 60

SECTION-A

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

Q.1 Which of the following is an example of active and inverse transducer

a) RTD

b) Thermometer

c) Piezoelectric transducer

d) LVDT

Q.2 Strain gauge is a

a) Resistive transducer

b) Capacitive transducer

c) Inductive transducer

d) Digital transducer

Q.3 An LVDT works on the principle of

a) Electromagnetic induction

b) Mutual induction

c) Seebeck effect

d) None of the above

Q.4 If we apply a pressure on piezoelectric transducer, we will get

a) Electric charge at the output

b) Displacement at the output

c) Pressure at the output

d) All of the above

Q.5 Shaft encoder is an example of

a) Analog transducer b) Active transducer

c) Inverse transducer d) Digital transducer

Q.6 Which of the following is not a static characteristics of transducer?

a) Accuracy b) Dead time

c) Resolution d) Peak time

SECTION-B

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

Q.7 Write the principle of operation of Strain gauge.

Q.8 Explain RVDT.

Q.9 RVDT works on the principle of _____.

Q.10 Differential arrangement of capacitive transducer is more _____ than the normal capacitive transducer.

Q.11 Expand LDR.

Q.12 There are two secondary and one primary coil in LVDT. (True/False)

SECTION-C

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

Q.13 Define the following

a) Accuracy b) Precision

c) Resolution d) Sensitivity

Q.14 Explain the working of LVDT with diagram.

Q.15 What are the different types of transducer? Explain active and passive transducer with example.

Q.16 Explain the working piezoelectric transducer with diagram.