9+7+24 = 101.

SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No: | | | | | | | | | | | | | Total number of pages:[01]
Total number of questions:06

B.Tech. || EE&ME || 6th Sem
Sensors and Transducers
Subject Code: BTEC-903A (Paper ID:

May, 2019, Regul

Max Marks: 60

Time allowed: 3 Hrs
Important Instructions:

- All questions are compulsory
- Assume any missing data

PART A (2×10)

Q. 1. Short-Answer Questions:

a) What is a transducer? Name the elements of a transducer.
b) Define transfer function of a transducer.
c) What is a peizoresistive effect?
d) What are rosettes?
e) Define piezoelectric effect.
f) Give the different forms of construction of thermistors.
g) Define scintillation. Give an example of scintillation crystal.
h) State Villari effect.
i) Define Wiedemann effect.
j) What are smart sensors?

PART B (8×5)

2.	List the various factors influencing the choice of transducers. OR Explain the various classifications of transducers. Give an example of each.	CO1
3.	Explain resistance potentiometers. Also discuss its linearity, sensitivity and resolution. Name the material used for potentiometers. OR Explain the construction and principle of working of a linear voltage differential transformer (LVDT). Explain how the magnitude and direction of the displacement of core of an LVDT detected. List the various advantages, disadvantages and uses of LVDT.	CO2
4.	Explain how capacitive transducers are used to measure displacement due to change of area. OR Explain thermoemf sensors. List the factors affecting the material choice for thermoemf sensors. Give the different categories of thermocouple.	CO3
5.	Explain the principle of working of Hall effect transducers .Explain its application for the measurement of displacement. OR Write a note on Geiger Muller counters.	CO4
6.	Explain Fiber optic sensors. OR Write notes on LDR and photo emissive cells.	CO4