

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E.

Branch: ELECTRONICS & INSTRUMENTATION ENGINEERING

Course Code: 19EI5PCTNI

Course: TRANSDUCERS & INSTRUMENTATION

Semester: V

Duration: 3 hrs.

Max Marks: 100

Date: 15.09.2023

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
 2. Missing data, if any, may be suitably assumed.

UNIT - I

1	a) Explain the methodology you use to measure the following parameters ? a. Moisture b. Viscosity c. Vibration	09
	b) Write a short note on the materials used for sensors .	04
	c) With neat sketch explain any two applications of sensors in automobiles.	07

UNIT - II

2	a) What do you mean by measurement of flow? List different types of flow meters existing? Give an example of each.	10
	b) Explain the principle and working of Orifice plate and Venturi type flow meters.	10

UNIT - III

3	a) Explain the basic principle, operation and characteristics of Thermistors RTD? When would you select thermistor or RTD to measure temperature explain.	14
	b) With a circuit diagram explain the lead wire compensation .	06

OR

4	a) Explain the principle and working of thermocouple? List the various types of thermocouples and their composition?	10
	b) What is cold junction compensation? Why is it required? Explain with a neat circuit the cold junction compensation of Thermocouple.	06
	c) List the various laws of thermocouples	04

UNIT - IV

5	a) Explain the principle and working of pressure transducers	06
	b) Explain the working of bourdon type pressure gauges.	14
	i)Bellows	
	ii)capsules	
	iii)Bourdon	

UNIT - V

6	a) Explain the measurement of Vacuum?	05
	b) Make a comparison among different pressure transmitters.	05
	c) What is pressure transmitter? Explain the calibration of smart pressure transmitter.	10

OR

7	a) What is load cell? What are the different types of load cells available. Explain about one in detail.	10
	b) Write short notes on	
	i)Hydraulic load cell	
	ii)Electronic weighing system	
