Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 07-10-2025 **Time:** 02.00pm to 03.30pm

School: SOE	**Program**: B.Tech EEE	
Course Code : EEE3046	**Course Name:** Sensors And Transducers	
Semester: V	**Max Marks**: 50	**Weightage**: 25%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**26**	**24**			

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **5Q x 2M=10M**

1	Mention two parameters of light that change in a fibre-optic sensor.	**2 Marks**	**L1**	**CO1**
2	State the working principle of LVDT.	**2 Marks**	**L1**	**CO1**
3	What does “aneroid” mean in aneroid gauges?	**2 Marks**	**L1**	**CO1**
4	What is luminous flux?	**2 Marks**	**L2**	**CO2**
5	What is the principle of a photoresistor (LDR)?	**2 Marks**	**L2**	**CO2**

Part B

Answer the Questions. **Total Marks 40M**

6.	**a.**	A resistance strain gauge is attached to a cantilever beam under a load. Explain how the change in resistance is used to calculate the applied strain using the concept of gauge factor.	**10 Marks**	**L2**	**CO1**
	b.	Explain how a load cell converts mechanical force into an electrical signal using strain gauges. Apply this principle to describe its use in electronic weighing machines.	**10 Marks**	**L3**	**CO1**
Or					

7.	**a.**	In fibre-optic sensors, explain how strain or stress alters the properties of light in the optical fibre. Illustrate its application in aircraft or space systems.	**10 Marks**	**L3**	**CO1**
	b.	An ionization gauge is used in semiconductor fabrication. Explain how it measures vacuum by relating the ion current with pressure.	**10 Marks**	**L3**	**CO1**

8.	**a.**	**Explain the concept of color temperature and its importance in lighting applications with suitable examples.**	**10 Marks**	**L2**	**CO2**
	b.	Explain the construction, working, and characteristics of a photoresistor (LDR).	**10 Marks**	**L2**	**CO2**
		or			
9.	**a.**	Describe solid-state transducers with suitable examples and their advantages over conventional types.	**10 Marks**	**L3**	**CO2**
	b.	Explain the principle and applications of photovoltaic devices with neat sketches.	**10 Marks**	**L3**	**CO2**