S. B. Roll. No.....

**INSTRUMENTATION**
**6th Exam/Elect/8527/Nov'24**
**(For 2018 Batch Onwards)**

**Duration: 3Hrs.** **M.Marks:75**

**SECTION-A**

**Q1. Fill in the blanks.** **15x1=15**

a. Measurement is the result of comparison between quantity of known magnitude and_____
b. L.E.D. requires _____voltage supply.
c. Transducers also called as_____
d. _____is a device which transfers energy from one form to another_____
e. LVDT stands for_____
f. Adhesives act as _____materials.
g. SI unit of force is_____
h. Load cell converts _____into electrical signal.
i. Torque is the force acting on a body that produces_____
j. Diaphragm does not require any _____as in case of bellows.
k. Piezoelectric transducers cannot measure _____pressure.
l. _____flow meter cannot be used for electrically non conductiong fluids like gases.
m. Doppler type ultrasonic flow meters measures flow in _____directions.
n. Temperature is the degree of _____or _____of a body.
o. Hygrometer is an instrument used to measure_____

**SECTION-B**

**Q2. Attempt any six questions.** **6x5=30**

i. What are the advantages of digital instruments?
ii. Define electric transducer.
iii. What is a resistance strain gauge?
iv. Define the term piezoelectricity.
v. Explain the working of photo electric transducers.
vi. Explain the principle of operation of electromagnetic flow meters.
vii. How do thermistors differ from resistance temperature detectors?
viii. What is the difference between evaporation and condensation?

**SECTION-C**

**Q3. Attempt any three questions.** **3x10=30**

a. What are the various parameters considered during the selection of various transducers?
b. Explain the construction, working, advantages and disadvantages of LVDT.
c. Explain the working and construction of hydraulic load cell.
d. Write a detailed answer on different types of bourdon tubes.
e. What do you understand from flow meter? Discuss about working of electromagnetic flow meter.