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**4th Sem. / Electronics & Communication Engg**

**Subject : Instrumentation**

Time : 3 Hrs.

M.M. : 100

**SECTION-A**

**Note:**Objective type questions. All questions are compulsory (10x1=10)

- Q.1 Give unit of Pressure.
- Q.2 Expand RTD.
- Q.3 Bourdons tube is used to measure density (True/False)
- Q.4 \_\_\_\_\_ is presence of water vapour in air.
- Q.5 Brake dynamometer is used to measure \_\_\_\_\_.
- Q.6 Thermocouple is based on \_\_\_\_\_ Effect.
- Q.7 Peizoelectric Crystal can act as passive Transducer. (True/False)

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Q.8 Load Cell is used to convert \_\_\_\_\_ to \_\_\_\_\_ signal.

Q.9 Thermopile is used to measure Torque (True/False)

Q.10 Freezing point of water is \_\_\_\_\_ degree Celcius.

**SECTION-B**

**Note:**Very short answer type questions. Attempt any ten questions out of twelve questions. 10x2=20

- Q.11 What is Primary transducer.
- Q.12 Define Gauge Factor.
- Q.13 State the principle of Thermister.
- Q.14 Name two devices to measure temperature.
- Q.15 Draw symbol of LED.
- Q.16 What is active transducer.
- Q.17 Give two advantages of LED.

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- Q.18 Define measured.
- Q.19 Define Speed.
- Q.20 State Piezoelectric effect.
- Q.21 What are ultrosonics.
- Q.22 pH value of Acidic Solution is \_\_\_\_\_ Value of 7.

### SECTION-C

**Note:** Short answer type questions. Attempt any eight questions out of ten questions.  $8 \times 5 = 40$

- Q.23 How transducer are classified?
- Q.24 Explain the working principle of Capacitive transducer.
- Q.25 State the working of Bimetallic Thermometer with suitable examples.
- Q.26 Explain the working of Pyrometer.
- Q.27 State the working of Potentiometer.
- Q.28 Explain how the pH of Liquid is measured.

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- Q.29 Write the working of Bellows in Pressure measurement.
- Q.30 Draw and explain the working of Load Cell.
- Q.31 Discuss the working of Thermisters.
- Q.32 Explain how vibrations are measured.

### SECTION-D

**Note:** Long answer type questions. Attempt any three questions out of four questions.  $3 \times 10 = 30$

- Q.33 What is atmospheric humidity? How is it measured by hygrometer.
- Q.34 Explain how level of liquid is measured by direct and indirect methods.
- Q.35 Write the principle and working LVDT explain how it is used to measure displacement.
- Q.36 What is See Beck effect Explain how thermocouple is used to measure temperature?

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