

D 11990

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Name.....

Reg. No.....

**THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021**

Common Course [B.Sc. LRP (Alternate Pattern)]

ELE 3A 12—SENSORS AND TRANSDUCERS

(2019—2020 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A*Answer at least **ten** questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 30.*

1. What is meant by direct sensing in transducers ?
2. What is an active transducer ? Explain with an example.
3. Define the accuracy and precision of a transducer.
4. What is meant by the dynamic characteristics of a transducer ? List these characteristics.
5. What is the basic principle of a potentiometer ?
6. Explain the effect of change in distance between the plates of a capacitance transducer.
7. What are the different types of thermistors ? Explain.
8. What is an RTD ? What is its basic principle ?
9. What is LDR ? How does it work as a sensor ?
10. What is the working principle of the IR sensor ?
11. What is the difference between continuous level and discrete level measurements ?
12. What is a pressure transducer ? What is it used for ?
13. State and explain Bernoulli's principle.
14. What is Hall Effect ? Why it is used ?
15. What is an Anemometer ?

(10 × 3 = 30 marks)

Turn over

Section B

*Answer at least **five** questions.*

Each question carries 6 marks.

All questions can be attended.

Overall Ceiling 30.

16. What are the different parts of an inductance transducer ? Explain with a diagram.
17. Explain the principle of the basic capacitance transducer.
18. Explain the measurement of temperature using a thermocouple with a diagram.
19. Explain the working of capacitive level gauges.
20. Explain the working of LVDT with a neat sketch.
21. Explain the pressure measurement with a U-tube manometer.
22. Explain the working of a venturi tube.
23. Write short notes on sound transducers.

(5 × 6 = 30 marks)

Section C

*Answer any **two** questions.*

Each question carries 10 marks.

24. Explain the working of bonded resistance strain gauge.
25. What is the basic principle of capacitance transducers ? Explain the capacitance transducers which work on the change of the area of plates.
26. Explain well type manometers.
27. Explain the basic principle and working of the electromagnetic flowmeter.

(2 × 10 = 20 marks)