D 31762 **(Pages : 2)** **Name.....**

Reg. No.....

THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2022

Common Course for B.Sc. L.R.P. (Alternate Pattern)

A 12—SENSORS AND TRANSDUCERS

(2019 Admission onwards)

Time : Two Hours and a Half Maximum : 80 Marks

Section A

Answer the following questions (1-15).
Each question carries 2 *marks.*

1. Define Resolution.
2. What is meant by transduction ?
3. What is the need for Isolation and grounding in transducers ?
4. Which are the factors that contribute to noise in the potentiometer ?
5. Explain the secondary transducer with an example.
6. What are the applications of strain gauges ?
7. Explain the working principle of capacitance transducer.
8. How does an RTD work ?
9. What is a thermistor ? What is it used for ?
10. What are the different types of IR sensors ?
11. How does a pressure transducer work ?
12. Explain Hall Effect. What are the applications of Hall Effect transducers ?
13. How the flow nozzle can measure the flow ?
14. How does a photovoltaic cell work ?
15. What is a sound level meter used for ? What are its different parts ?

(Ceiling 25 marks)

Turn over

Section B

Answer the following questions (16 - 23).
Each question carries 5 *marks.*

16. Explain the non-linearity in sensors. What is the consequence of non-linearity in measurement ?
17. Explain the measurement of displacement using LVDT.
18. Explain the thermistor working principle.
19. Explain the construction and working of U-tube manometers.
20. What is an orifice plate ? What are its applications ?
21. Write a note on LDR and its applications.
22. Explain the working principle of the electromagnetic flowmeter.
23. Explain the construction, working and application of a photo emissive cell ?

(Ceiling 35 marks)

Section C

Answer any **two** *questions.*
Each question carries 10 *marks.*

24. Explain the working of the strain gauge in detail.
25. With a neat diagram, explain the construction, principle, and working of a thermocouple. What are its applications ?
26. Explain the continuous level measurement using a level transducer with a neat sketch.
27. Explain the principle of operation and working of any type of microphone.

(2 × 10 = 20 marks)