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2112E021

**BACHELOR OF VOCATION**  
**Mechatronics**  
**Subject: Sensors and Transducers**  
**Subject Code: ECE-702**  
**Semester: Fifth**  
**December 2021**  
**Theory (External): 35 Marks**  
**Time: 03 Hours**

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**Instructions to the Students**

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 1 mark.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

Roll Number									

**SECTION –A (SHORT/OBJECTIVE TYPE QUESTIONS)**  
**(10x1=10 Marks)**

- A. What is the difference between a sensor and a transducer?
- B. What is Hall Effect?
- C. What is the working principle of temperature transducers? What are the different type of temperature transducers?
- D. What are SYNCHROS? Mention the types of it.
- E. Explain the working principle of a gyroscope.
- F. What is Anemometer? Mention its advantages.
- G. What is piezoelectric effect?
- H. What is Biological Sensors? Mention its applications.
- I. Explain the term sensor reliability.
- J. Explain the working principle of inductive transducers.

**SECTION –B (ESSAY TYPE QUESTIONS)**  
**(5x5=25 Marks)**

1. Explain working principle advantages, disadvantages and industrial applications of Resolvers.
2. What is pirani gauge? Explain its working principle.
3. Explain Electromagnetic Flow meters? Mention its advantages and disadvantages.
4. Write short notes on Load Cells? Also explain Tensile-Compressive cells.
5. What is calibration? How to calibrate a strain gauge.
6. What is manometer? Explain its working principle.
7. Explain the working of an optical encoder.
8. Explain in details the advantage of Digital Displacement Sensor over LVDT Displacement Sensor.

===END OF PAPER===