

**328416(28)**

**B. E. (Fourth Semester) Examination, 2020**

**(Old Scheme)**

**(Et&T Branch)**

**INDUSTRIAL TRANSDUCERS & SENSORS**

*Time Allowed : Three hours*

*Maximum Marks : 80*

*Minimum Pass Marks : 28*

*Note : Attempt all questions. Part (a) of each question is compulsory and carries 2 marks. Attempt any **two** parts from (b), (c) and (d) which carry 7 marks each. Assume suitable data where necessary.*

**Unit-I**

1. (a) Define Transducer. 2
- (b) Give the classification of transducer with one example of each type. 7

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- (c) Discuss the construction and principle of resistive transducer used for displacement. 7
- (d) Explain the construction and principle of operation of optical radiation transducer. 7

**Unit-II**

2. (a) Define Eddy current. 2
- (b) Describe the construction and working of LVDT. 7
- (c) Explain the construction and principle of operation of capacitive transducer used for measurement of thickness. 7
- (d) Write a short note on capacitive transducer used for measurement of moisture. 7

**Unit-III**

3. (a) What do you mean by piezo electric phenomenon? 2
- (b) Discuss the acceleration transducer in details. 7
- (c) Explain the magnetostrictive transducer in details. 7
- (d) Write a short note on Hall effect transducers. 7

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**Unit-IV**

4. (a) Define Photoelectric Transducer. 2
- (b) Explain the construction and working of techo-meter. 7
- (c) Discuss the electromagnetic flow meters with its neat sketch. 7
- (d) Write a short notes on : 7
- (i) Photo conductive
- (ii) Photo voltaic

**Unit-V**

5. (a) What do you mean by Electrochemical Transducers? 2
- (b) Discuss the construction and working of digital displacement transducer. 7
- (c) Explain the nuclear radiation transducer in detail. 7
- (d) Write a short note on pH electrode. 7