

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)**

**CLASS: BE
BRANCH: ALL**

**SEMESTER: VII/ADD
SESSION : MO/2018**

SUBJECT : MEC1047 SENSOR AND TRANSDUCER

TIME: 1.5 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 30.
2. Candidates may attempt for all 30 marks.
3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. The missing data, if any, may be assumed suitably.

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- Q1 (a) Explain the different characteristics of sensor observed in laboratory testing. [2]
(b) Differentiate between Sensor, Transducer, Detector, Switches and Converter with appropriate examples. [3]
- Q2 (a) Explain the different criteria on which Sensors are classified. [2]
(b) Define the most usable parameter for the development of different types of sensor. Give suitable examples. [3]
- Q3 (a) What is potentiometer and how it is used to sense physical parameter? Mention its different types. [2]
(b) Explain the principle of Hall Effect Sensor and its application to Displacement measurement. [3]
- Q4 (a) Explain Quartz resonator for the measurement Force/Stress. [2]
(b) Explain working of Eddy current type tachometer. [3]
- Q5 (a) Explain working of Acoustic temperature sensor. [2]
(b) Explain the types of metal resistance thermometric sensor. [3]
- Q6 (a) Define the laws on which radiation thermometers are developed and their main components. [2]
(b) Explain the working of Photoemissive cell and the Photomultiplier. [3]

::: 18/09/2018 :::M