

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**

**Regular End Semester Examination – Summer 2022**

**Course: B. Tech.      Branch : Mechanical Engineering      Semester : Sixth**

**Subject Code & Name:    BTMEC604D Mechanical Measurements**

**Max Marks: 60**

**Date: 23/08/2022**

**Duration: 3.45 Hr.**

**Instructions to the Students:**

1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

	(Level/ CO)	Marks
<b>Q. 1 Solve Any Two of the following.</b>		
A) What are the significance of measurement? What are the various methods of measurements?	CO1	6
B) Draw the generalised block diagram of measurement system and explain various elements in it.	CO1	6
C) Explain the following. i) Threshold & Resolution ii) Calibration of instruments iii) Hysteresis & dead zone	CO1	6
<b>Q.2 Solve Any Two of the following.</b>		
A) How optical flat used for measurement of straightness.	CO2	6
B) What are slip gauges? How are they used in conjunction with sine bars?	CO2	6
C) What are various types of linear measuring instruments? Explain Any one in details with neat sketch.	CO2	6
<b>Q. 3 Solve Any Two of the following.</b>		
A) Explain the mechanism of bourdon tube pressure gauge with neat sketch	CO3	6
B) Explain the construction & working of Rotameter.	CO3	6
C) Explain the working of hot wire Anemometer. Where it is used? What are its limitations?	CO3	6
<b>Q.4 Solve Any Two of the following.</b>		
A) What do you mean by absorption dynamometer? List various absorption dynamometer. Explain any one with neat sketch giving advantages and limitations.	CO4	6

- B) Explain the construction & working of pneumatic load cell? **CO4 6**
- C) Explain how temperature affects the performance of strain gauge? What are the various methods of compensating the temperature change? Explain any one method. **CO4 6**

**Q. 5 Solve Any Two of the following.**

- A) What do you mean by stroboscope? Explain its working. **CO5 6**
- B) Sketch and explain the working of linear variable differential transducer **CO5 6**
- C) Explain with sketch the working of Total Radiation Pyrometer. **CO5 6**

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