

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
Q. 1 Solve Any Two of the following.		
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
Q.2 Solve Any Two of the following.		
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
Q. 3 Solve Any Two of the following.		
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
Q.4 Solve Any Two of the following.		
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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