[Total No. of Questions: 09]　　　　　　　　　　[Total No. of Pages: 2]
Uni. Roll No. ....

Program: B.Tech. (Batch 2018 onwards)　　　　MORNING
Semester: 5ᵗʰ　　　　　　　　　　　　　　　　1 3 MAY 2023
Name of Subject: Mechanical Measurement and Control
Subject Code: PCME-113
Paper ID: 16380
Scientific calculator is allowed

Time Allowed: 03 Hours　　　　　　　　　　　　**Max. Marks: 60**

NOTE:

1) Parts A and B are compulsory
2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
3) Any missing data may be assumed appropriately

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Part – A　　　　　　　　　　　　　**[Marks: 02 each]**

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Q1.

(a) Why wavelength standards are preferred over line and end standards?
(b) What is a bimetallic thermometer?
(c) Enlist various methods for measurement of speed of shaft.
(d) Define closed loop control system.
(e) How clinometers are used for angular measurement?
(f) Difference between dead zone and dead time.

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Part – B　　　　　　　　　　　　　**[Marks: 04 each]**

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Q2. Explain the construction and working of Talysurf Roughness tester.

Q3. Discuss the use of Mc-leod Gauge for Vacuum measurements with neat sketch.

Q4. Elaborate generalized measurement system in detail with neat sketch.

Q5. Classify errors in measurement, also discuss their sources and method to eliminate or minimize them from measurement system.

Q6. Discuss various flow visualisation techniques.

Q7. What is strain gauge? Classify various types of strain gauges in basis of their structure.

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Q8. Differentiate between static and dynamic characteristics of measuring instruments. Also, explain various static and dynamic characteristics associate with instruments.

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Or

13 MAY 2023

Explain various types of variable resistance based transducers in detail with near sketch.

Q9. Suggest a pyrometer used to detect the temperature of inaccessible source like inner core of furnace. Also, explain its construction and working.

Or

What is dynamometer? Explain different types of dynamometers for torque measurement with neat sketch.

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