BHARATI VIDYAPEETH'S INSTITUTE OF TECHNOLOGY NAVI MUMBAI.

QUESTION BANK UT1

Course title - Mechanical Engineering Measurement. (MEM)

Course code-22443

Program Name- mechanical engineering (ME4I)

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## Topic -1 Introduction to Measurement (12 marks)

### 2 mark questions.

1. Define measurement, State its significance.
2. Define measurement, state its types.
3. Define the term Range & Span.
4. Define the term Accuracy & precision.
5. What is the function of transducer?
6. What are the active & passive transducers? Give two examples of each.

### 4 mark questions.

7. Define the terms Threshold, Resolution, Repeatability & Reproducibility.
8. Define Instrument & Give the classification for it.
9. Define the terms Fidelity, Dynamic error, overshoot & measuring lag.
10. Define Transducer. Explain the classification of transducer.
11. Define Error state classification of error & explain any one.

## Topic -2 Displacement, Force & Torque Measurement. (12 marks)

12. Write any four selection factors of Displacement transducer.
13. List any four applications of displacement transducer.

14. State applications of potentiometer & write its working principle.

15. State any four specifications of L.V.D.T.

16. Draw & sketch characteristics of force measurement system.

17. Write any four applications of load cell.

### 4 Mark Questions

18. Explain capacitive transducer with one application.

19. Draw neat sketch of LVDT & explain its working.

20. Explain with neat sketch working of strain gauge load cell.

21. Explain the construction & working of rotary transformer torque sensor.

22. Explain with neat sketch the working of eddy current dynamometer.

## Topic 3- Pressure & Temperature Measurement. (12 marks)

### 2 mark Questions.

23. Define pressure. & list pressure measurement gauges.

24. State advantages & disadvantages of Pirani gauge.

25. Draw neat sketch for pressure measurement using Bellows.

26. State the materials used for Bourdon tube.

27. Draw & sketch the liquid in glass thermometer.

28. State Seeback & peltier effect.

29. Compare thermocouple & thermister.

30. What the different materials used for developing thermocouple.

### 4 mark Questions.

31. Explain with neat sketch working of Mc-leod gauge.

32. Explain construction & working of Pirani gauge.

33. Explain construction & working principle of bourdon gauge.

34. Explain with neat sketch photoelectric pressure transducer.

35. Explain the working of liquid pressure thermometer with neat diagram.

36. Explain with neat sketch platinum resistance thermometer. (PT-100)

37. Explain construction & working of bimetallic thermometer.

38. Explain the working of optical pyrometer with neat sketch.

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