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Total No. of Pages : 01

Total No. of Questions : 09

B.Tech. (Ind. Engg. & Mgt.) (Spl. in TQM) (Sem.-3)**MEASUREMENTS AND METROLOGY****Subject Code : IEM-303****Paper ID : [61013]****Time : 3 Hrs.****Max. Marks : 40****INSTRUCTIONS TO CANDIDATES :**

1. Attempt All EIGHT questions from SECTION-A carrying TWO marks each.
2. Attempt any SIX questions out of EIGHT from SECTION-B carrying FOUR marks each.

SECTION-A**Q1. Answer briefly :**

- a. What is difference between accuracy and precision?
- b. What are limit gauges?
- c. What is screw thread gauge? How is it used?
- d. What is the procedure of stress and strain testing?
- e. What are load cells?
- f. What are sensors and transducers?
- g. What are spatial tolerances?
- h. What is inter-laboratory comparison?

SECTION-B

- Q2. Explain different types of errors.
- Q3. Explain different types of comparators.
- Q4. Explain straightness, flatness, squareness, parallelism.
- Q5. What is surface roughness? How is it measured? What are its units?
- Q6. Explain the methods to measure liquid level in an opaque tank.
- Q7. Explain selection method of transducers.
- Q8. Explain interference fit, transition fit and clearance fit with the help of diagram.
- Q9. What is calibration? Explain different types of calibration laboratories.