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Question Paper Code: 36073

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Sixth Semester

Mechanical Engineering

01UME603 - ENGINEERING METROLOGY AND MEASUREMENTS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Differentiate between accuracy and precision.
2. List any two types of absolute error.
3. Name any four non-dimensional gauges.
4. Define sine center.
5. Name the various method of measuring the minor diameter of the thread.
6. Mention the methods of roundness measurement.
7. List the different types of interferometer.
8. Name the type of accuracy specifications used for CMM.
9. Define gauge factor.
10. Mention some uses of pyrometer.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain the need of precision and accuracy in metrology. (16)

Or

(b) Explain the dimensional and geometric tolerances. (16)

12. (a) Explain with a neat sketch the construction and working of tool makers microscope. (16)

Or

(b) Explain with a neat sketch the pneumatic and hydraulic comparators with neat sketches. (16)

13. (a) Describe the constant chord method and base tangent method for measuring gear teeth with neat sketches. (16)

Or

(b) Describe a method to find out flatness of a surface plate (16)

14. (a) Explain the principles of measurement using laser interferometer. (16)

Or

(b) What is meant by alignment test on machine tools? Why they are necessary? (16)

15. (a) Explain with a neat sketch of construction and working of venturimeter and rotameter. (16)

Or

(b) Explain the construction and working of thermocouple and pyrometer. (16)
