Reg. No. : | | | | | | | | | | |

Question Paper Code: 31763

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

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. What is meant by sensitivity?
2. Define the term ‘calibration’.
3. Explain the usage of slip gauges.
4. What is the usage of bevel protector.
5. Define pitch of a thread.
6. What is meant by surface finish?
7. What is meant by LASER?
8. List the types of CMM.
9. What is meant by thermocouple?
10. Explain the usage of pitot tube.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Differentiate precision and accuracy. (8)

(ii) Write short note on (i) Repeatability (ii) Interchangeability. (8)

Or

(b) (i) List the source of errors. (8)

(ii) Distinguish systematic and random errors. (8)

12. (a) (i) Explain Tool makers microscope with a neat sketch. (8)

(ii) Explain the procedure of angular measurement using a sine bar. (8)

Or

(b) Explain mechanical, pneumatic and electrical comparators with neat sketch. (16)

13. (a) (i) Explain gear tooth measurement by constant chord method. (8)

(ii) Explain floating carriage micrometer. (8)

Or

(b) Explain the concept of straightness, flatness and roundness measurements. (16)

14. (a) Explain the LASER interferometer in detail. (16)

Or

(b) Explain the coordinate measuring machine in detail. (16)

15. (a) Compare the flow measurement techniques in orifice, venture and rotameter. (16)

Or

(b) Compare the pyrometer and electrical resistance thermistor. (16)

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