Code No: **R32031** **R10** Set No. 1

III B.Tech II Semester Supplementary Examinations, Dec - 2015
METROLOGY
(Mechanical Engineering)

Time: 3 hours   Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks
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1 a) Explain what is meant by precession and accuracy.
   b) Define and explain the terms:
       i) tolerances, ii) limits and fits, iii) interchangeability.

2 a) Write short notes on limit gauges.
   b) Differentiate between
       (i) Tolerance and Allowance
       (ii) Hole-base system and Shaft-base system.

3 a) Explain the advantages of using optical instruments. Briefly explain the principle
       of measurement by using optical flats.
   b) Describe the working of toolmakers micro scope.

4   Explain various numerical methods to calculate surface roughness.

5 a) Differentiate between mechanical and pneumatic comparators.
   b) Explain various types of electrical comparators.

6 a) With a neat sketch explain gear teeth nomenclature.
   b) Explain the working of rolling gear tester.

7 a) Describe the two wire method of finding the effective diameter of screw thread.
   b) What is the best wire size? Derive an expression for the same in terms of pitch
       'p' and angle of the thread.

8   Explain the alignment test on Milling machine and on lathe.

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