

Code No: **R32031**

R10

Set No. 1

III B.Tech II Semester Supplementary Examinations, April -2017

METROLOGY

(Mechanical Engineering)

Time: 3 hours**Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

- 1 a) Explain the following terms
i) Selective assembly ii) Interchangeability iii) Limits and fits.
b) What is meant by tolerance? Explain hole basic and shaft basic system?
- 2 Explain various methods of measuring angles and tapers.
- 3 a) Explain in detail various types of optical measuring instruments.
b) Describe the measurement of flatness by using auto collimates?
- 4 a) Explain the terms (i) R_t value and (ii) CLA value of roughness.
b) Describe various method of measuring surface finish?
- 5 a) Differentiate between mechanical, optical and pneumatic comparators?
b) Briefly describe electrical and electronic comparators?
- 6 Explain the following: i) measuring instruments for tooth thickness.
ii) Instrument to measure surface finish.
- 7 a) Briefly explain the concept of virtual effective diameters?
b) Explain at least two methods to calculate effective diameter.
- 8 Explain tool alignment test for
i) Drilling and ii) Milling machine

* * * * *