

Code: ME5T4

**III B.Tech - I Semester – Regular Examinations – December 2016**

**ENGINEERING METROLOGY  
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

**PART – A**

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1. a) What is upper and lower deviations?
- b) What is Maximum material limit and minimum material limit?
- c) What is a Go gauge?
- d) Explain the importance of calibration of slip gauge.
- e) Explain the major difference between Angle dekkor and Sine bar.
- f) Write the limitations of Tool maker's microscope and its applications.
- g) What is the difference between Roughness and Waviness?
- h) What is Thread angle, Major diameter, Minor diameter and Lead angle?
- i) What is 'Best size' wire?
- j) What is comparator ? Also write applications of optical comparators.
- k) Explain the necessity of alignment test on lathe machines.

## PART – B

Answer any **THREE** questions. All questions carry equal marks. 3 x 16 = 48 M

2. Explain Shaft and hole basis system with help of neat diagram. And also explain Interchangeability and selective assembly with suitable examples. 16 M
  
3. Explain the construction & applications of Bevel protractor & micrometer. 16 M
  
4. Write the principle of collimator and explain in detail about types of collimators. 16 M
  
5. a) Explain the constant chord method with neat diagram. 8 M  
  
b) Describe the methods to measure the effective diameter. 8 M
  
6. Draw and explain in detail about principle and working of any one mechanical and pneumatic Comparators. 16 M