

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-IV Examination-Nov/Dec-2011

Subject code: 141901

Date: 28/11/2011

Subject Name: Mechanical Measurement & Metrology

Time: 02.30 pm -5.00 pm

Total marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) State the need of precision measurement. Explain two standards of linear measurement briefly. **07**
- (b) Discuss the construction and working of vernier bevel protector with neat sketch. **07**
- Q.2** (a) Discuss the gear tooth terminology with neat sketch. **07**
- (b) Discuss the constructions and working of vernier depth gauge with neat sketch. **07**
- OR**
- (b) Discuss the constructions and working of telescopic gauge with neat sketch. **07**
- Q.3** (a) What are the angle gauges? How they are used? Explain briefly with neat sketch. **07**
- (b) Discuss the elements of screw thread with neat sketch. **07**
- OR**
- Q.3** (a) Discuss the methods of measuring surface finish briefly. **07**
- (b) Explain numerical evaluation of surface texture with neat sketch. **07**
- Q.4** (a) Discuss the measurement of straightness with neat sketch. **07**
- (b) Explain the alignment test on lathe machine with neat sketch. **07**
- OR**
- Q.4** (a) Discuss the static characteristics of the instrument briefly. **07**
- (b) Classify the transducers. Discuss the selection criteria of transducers. **07**
- Q.5** (a) Discuss the construction and working of thermocouple with neat sketch. **07**
- (b) Classify the instrument for pressure measurement. Explain bourdon tube pressure gauge. **07**
- OR**
- Q.5** (a) Explain the calibration of pressure measuring instrument briefly. **07**
- (b) Name the instrument used for force, torque and displacement. Explain prony brake dynamometer with neat sketch. **07**
