

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV(OLD) • EXAMINATION – WINTER 2016

Subject Code: 141901

Date:22/11/2016

Subject Name: Mechanical Measurement & Metrology

Time:02:30 PM to 05:00 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) What are the necessity and objectives of metrology? Explain **07**
(b) Explain with neat sketch construction and working of vernier caliper. **07**
- Q.2** (a) Explain with neat sketch construction and working of inside micrometer. **07**
(b) What are the application, advantage and limitations of angular measuring instruments? **07**
- OR**
- (b) Explain with neat sketch construction and working of gear tooth terminology **07**
- Q.3** (a) Explain method for measuring elements of external screw thread with three wire method. **07**
(b) Explain construction and working of sine bar and angle gauge. **07**
- OR**
- Q.3** (a) Explain construction and working of burden tube pressure gauge. **07**
(b) Draw a block diagram of a generalized measurement system(G.M.S.)and Explain the various elements in detail. **07**
- Q.4** (a) Explain the following giving suitable examples: **07**
(I)Range and span
(II)Accuracy and precision
(III)Calibration
(IV)Thresold and resolutions
(b) Explain the construction and working of standard gear tooth tester with neat sketch. **07**
- OR**
- Q.4** (a) Explain the construction and working of the following with neat sketch **07**
(I)Telescopic gauge
(II)Universal bevel protector
(b) Explain the thermoelectric pyrometer in detail **07**
- Q.5** (a) Explain the construction and working of mcLeod gauge with neat sketch. **07**
(b) (I)Explain the flash light stroboscope **07**
(II)Explain the diaphragm gauges in brief.
- OR**
- Q.5** (a) Explain the importance of alignment test for machine tools.Briefly explain the alignment test for machine tools.(any one). **07**
(b) Explain the bimetallic thermometer in detail. **07**
