

GUJARAT TECHNOLOGICAL UNIVERSITY**PDDC - SEMESTER-II • EXAMINATION – SUMMER • 2014****Subject Code: X21903****Date: 26-06-2014****Subject Name: Mechanical Measurement and Metrology****Time: 10:30 am - 01:00 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) Describe with neat sketch International Prototype Meter (Material Length Standard) stating material composition and Limitations. **07**
(b) Explain principle of vernier caliper and its calibration. **07**
- Q.2** (a) Explain Construction and use of (i) Slip gauges, (ii) Dial indicator. **07**
(b) Describe with sketch (i) Sinebar (ii) Sine center. **07**
- OR**
- (b) Describe with sketch the construction and working of sigma comparator. **07**
- Q.3** (a) Explain Parkinson gear tester with neat sketch. **07**
(b) Explain Surface texture and element of Surface roughness. **07**
- OR**
- Q.3** (a) Explain following terms used in surface finish: **07**
(i) Roughness, (ii) Waviness, (iii) Effective profile, (iv) Centreline of profile,
(b) Write short notes on Tool maker's microscope. **07**
- Q.4** (a) Explain various alignment tests to be performed on Lathe machine. **07**
(b) What are primary, secondary and tertiary measurements? Explain it. **07**
- OR**
- Q.4** (a) Explain (i) Precision and Accuracy (ii) Threshold and Resolution **07**
(b) Describe with sketch bimetal strip thermometer stating salient features. **07**
- Q.5** (a) Describe with sketch a liquid-in-glass thermometer. Explain its application. **07**
(b) Write short note on following (i) Thermistors. (ii) Thermocouples. **07**
- OR**
- Q.5** (a) Explain the construction and working of Bourdon tube pressure gauge. **07**
(b) What is 'Slip' in relation to flashing stroboscope? Explain stroboscope. **07**
