

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
Diploma Engineering Semester –IV Examination Dec. - 2011

Subject code: 345501

Date: 05/12/2011

Subject Name: Instrumentation Control & Quality Assurance

Time: 10.30 am – 1.00 pm

Total Marks: 70

Instructions:

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. English version is considered Authentic.**

- Q.1** (a) Write SI units and symbol of following. **07**
(1) length (2) mass (3) time (4) electric current (5) thermo dynamic temperature (6) area (7) volume (8) speed, velocity (9) acceleration (10) density, mass density (11) frequency (12) force (13) pressure (14)energy, work
- (b) Classify the measuring instrument. Explain factors for selecting measuring instruments. **07**
- Q.2** (a) Define the term “metrology”. Explain role of metrology in quality control. **07**
(b) Explain Following terms briefly **07**
(1) measuring range (2) sensitivity (3) hysteresis (4) response time (5) repeatability (6) precision & accuracy (7) In accuracy
- OR**
- (b) Explain micrometer screw gauge with neat sketch. **07**
- Q.3** (a) Explain Bevel protectors with neat sketch. **07**
(b) Explain construction and working of Tomlinson surface finish tester with neat sketch. **07**
- OR**
- Q.3** (a) Explain Clinometers with neat sketch. **07**
(b) Make dimension of 24.3655 by using M112 slip gauge set. **07**
- Q.4** (a) Define the term “pressure” write unit of pressure. Classify different pressure measuring instrument & explain any one with neat sketch. **07**
(b) Explain following temperature measuring instruments with neat sketch. **07**
(1) Resistance thermometer (2) Radiation pyrometer
- OR**
- Q. 4** (a) Explain following flow measuring instruments with neat sketch. **07**
(1) Venturimeter (2) Orifice plate meter
(b) Explain Automatic control system with block diagram. **07**
- Q.5** (a) Explain inspection planning. **07**
(b) What is calibration ? explain calibration procedure of vernier caliper with neat sketch. **07**
- OR**
- Q.5** (a) Define the term “Quality control”. Explain basic objectives and advantages Quality control **07**
(b) Write short note on **07**
(1) TQM (2) 5-S
