

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Diploma Engineering - SEMESTER – IV • EXAMINATION – WINTER 2012**

**Subject code: 345501****Date: 24/12/2012****Subject Name: Instrumentation Control and Quality Assurance****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

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

- Q.1** (a) Classify the measuring instrument. Explain factors of selecting measuring instruments. **07**
- (b) Explain following term briefly **07**
1. Measuring range 2. Sensitivity 3. Hysterisis 4. Response time  
5. Repeatability 6. Precision & accuracy 7. In accuracy
- Q.2** (a) Define “errors” in measurement. Classify & Explain different types of error in measurement. **07**
- (b) Explain a types of vernier caliper with neat sketch. **07**
- (b) What is calibration? Explain calibration procedure of vernier calliper with neat sketch. **07**
- Q.3** (a) Make 28.3685mm dimension by using M 112 slip gauge set. **07**
- (b) Make 30°50'30" dimension by using angle gauge set draw Its sketch. **07**
- OR**
- Q.3** (a) Draw a neat sketch working principle, least count and application of Bevel protector **07**
- (b) Explain following flow measuring instruments with neat sketch. **07**
1. Venturimeter  
2. Pitot tubes  
3. Rota meter
- Q.4** (a) Explain following pressure measuring instrument. **07**
1. Bourdon tube pressure gauge  
2. Diaphragm gauge
- (b) Explain following temperature measuring instruments with Neat sketch: **07**
1. Bimetalic thermo meter  
2. Radiation pyrometer
- OR**
- Q. 4** (a) Explain automatic control system with block diagram. **07**
- (b) Explain duties of inspector in fabrication industry **07**
- Q.5** (a) Explain role of third party in inspection agency working fabrication industry. List different TPI working in fabrication. **07**
- (b) Explain interchange ability and selective assembly. **07**
- OR**
- Q.5** (a) Define the term quality control. Explain objective and advantages quality control. **07**
- (b) Write brief note on **07**
1. Kaizen  
2. Bench marking

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