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BIME-027

DIPLOMA – VIEP – MECHANICAL ENGINEERING (DMEVI)

Term-End Examination

00436

June, 2015

BIME-027 : METROLOGY AND QUALITY CONTROL

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks.*

1. (a) Define basic size, deviation, upper limit, lower limit of a size, tolerance and allowance. 7

(b) Explain the method of calibration of slip gauges. 7

2. (a) Explain Taylor's principle as applicable to limit gauging, with sketches. 7

(b) Explain the principle of sine bar for angular measurement. 7

3. (a) Describe the working principle of a Solex pneumatic comparator. 7

(b) Elucidate the measurement of effective diameter of thread by three-wire method. 7

4. (a) Indicate how various surface roughness specifications are placed relative to the symbol. 7

(b) Describe the working of a profile projector. Mention its applications also. 7

5. (a) Explain the advantages of Coordinate Measuring Machines (CMMs) as applied to Inspection Department. 7

(b) List all the alignment tests that you recommend for a lathe machine. Briefly explain the method of checking collinearity of live and dead centres of a lathe. 7

6. (a) List the important tools for TQM. Briefly explain quality function deployment. 7

(b) Briefly describe sequential sampling. 7

7. Write short notes on the following : $4 \times 3\frac{1}{2} = 14$

(a) Pareto Analysis

(b) Six Sigma

(c) Application of Laser in Measurement

(d) Operational Characteristic (OC) Curve