BIME-027

DIPLOMA – VIEP – MECHANICAL ENGINEERING (DMEVI)

Term-End Examination

December, 2015

BIME-027 : METROLOGY AND QUALITY CONTROL

Time : 2 hours   *Maximum Marks : 70*

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

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1. (a) Name and sketch three main types of fits. Give the applications of each.   7

   (b) Distinguish between Primary, Secondary and Tertiary working standards of length.   7

2. (a) Briefly describe the characteristics of a good dial indicator. Outline the uses of a dial gauge.   7

   (b) Sketch the various types of sine bars used in angular measurements.   7

3. (a) Discuss the method for testing of straightness by using spirit level.   7

   (b) What are slip gauges ? Outline their applications.   7

4. (a) Explain the principle of measurement by light wave interference method. 7

   (b) Explicate the uses of (i) auto collimator, (ii) straight edge, and (iii) surface plate. 7

5. (a) Differentiate between primary texture and secondary texture. 7

   (b) What are the advantages and disadvantages of mechanical comparators ? Explain. 7

6. (a) Describe how you would check the squareness of milling machine cross slide ways to the vertical guide ways of column. 7

   (b) Is there any need for use of Coordinate Measuring Machines (CMMs) in the inspection department ? Explain. 7

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

   (a) Zero Defect

   (b) Pareto Analysis

   (c) Sequential Sampling Plan

   (d) Process Capability