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BIME-027

DIPLOMA – VIEP – MECHANICAL ENGINEERING (DMEVI)

01495

Term-End Examination

December, 2014

BIME-027 : METROLOGY AND QUALITY CONTROL

Time : 2 hours *Maximum Marks : 70*

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

1. (a) Name the various types of fits used for the purpose of assembly of machine parts. Describe interference fit in detail. 7

(b) State the Taylor's principle for the design of limit gauges. 7

2. (a) What is the speciality of a tool maker's microscope as compared to an ordinary laboratory microscope ? Describe its features. 7

(b) Briefly discuss about the pneumatic comparators. Explain flow velocity type pneumatic comparators. 7

3. (a) What is meant by a gear tooth thickness ? How do you measure it with the help of a gear tooth vernier ? 7

(b) State the instruments used to find the base tangent thickness of a gear teeth. 7

4. (a) Define the pitch of a screw thread. Draw a line diagram of a pitch measuring machine and describe its working. 7

(b) Explain the function and operation of a stylus type surface texture measuring instrument. 7

5. (a) Define the term quality control. Explain its objectives. 7

(b) Show how assignable causes of variations are identified on $\overline{X}$ and R charts. 7

6. (a) What is the difference between a defect and defective ? Outline the theory underlying control charts for defects. 7

(b) What do you understand by quality assurance ? State its advantages. 7

7. (a) What is meant by sequential sampling plan ? Explain stating its application. 7

(b) Draw a neat sketch of an OC curve showing its different zones. 7