

**DIPLOMA VIEP MECHANICAL ENGINEERING
(DMEVI)**

Term-End Examination

December, 2013

BIME-033 : MACHINES TOOLS

Time : 2 hours

Maximum Marks : 70

Note : Attempt total five questions. Question no. 1 is compulsory question and four questions are to be attempted out of question no 2 to 7.

1. Write the correct answer of the following questions : **2x7=14**
- (a) The broaching operation in which the tool moves past the stationary work is known as :
- (i) Push Broaching
 - (ii) Pull Broaching
 - (iii) Continuous Broaching
 - (iv) Surface Broaching
- (b) The process of improving cutting action of grinding wheel is called :
- (i) Dressing operation
 - (ii) Turning operation
 - (iii) Cutting operation
 - (iv) Facing operation

- (c) A twist drill is specified by :
- (i) An alphabet specifying hole size
 - (ii) A number specifying hole size
 - (iii) The size of hole it can drill
 - (iv) Any one of the above
- (d) Lathe spindle has got :
- (i) Internal threads
 - (ii) External threads
 - (iii) Taper threads
 - (iv) No threads
- (e) Quick return mechanism is used in :
- (i) Milling machine
 - (ii) Broaching machine
 - (iii) Shaping machine
 - (iv) Welding machine
- (f) Which of the following is used as cutting fluid for the machine of aluminium.
- (i) Heavy water
 - (ii) Kerosene
 - (iii) Soluble oil
 - (iv) Sulphurised mineral oil
- (g) For ferrous materials, the helix angle of drill is taken as :
- (i) 30°
 - (ii) 60°
 - (iii) 45°
 - (iv) 90°

2. (a) Discuss the relative merits of the flat and V shapes of the bed ways of lathe 4
- (b) Sketch and explain the construction and working of the tailstock of a lathe. 10
3. (a) How do you classify the different types of drilling machines ? 7
- (b) Explain the terms cutting speed, feed and depth of cut with reference to the drilling machine. 7
4. (a) What are the main operations performed on a planner ? 4
- (b) Describe in detail the 'ratchet' and 'Paul' feed mechanism of a shaper. 10
5. (a) What is the working principle involved in a milling operation ? 4
- (b) What do you understand by 'Grain', 'Grit', 'Structure' and 'Grade' of a grinding wheel ? Explain. 10
6. (a) Why fixtures are necessary in broaching ? 4
- (b) Describe the main features of CNC machines, which distinguish them from conventional machine tools. 10

7. Write short notes on *any two* : **2x7=14**

- (a) DNC machine
 - (b) Thread cutting operation in lathe
 - (c) Difference between Capston and Turret Lathe
 - (d) Lapping and Honing operation
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