B.Tech. – VIEP – MECHANICAL ENGINEERING (BTMEVI)

Term-End Examination

00676

June, 2015

BIME-009 : PRODUCTION TECHNOLOGY – I

Time : 3 hours   *Maximum Marks : 70*

Note : Answer any *five* questions. Use of calculator is permitted.

1. (a) Explain the various cleaning and finishing processes used for castings.   7

   (b) The volume of a cube of side '*l*' and the volume of a sphere of radius '*r*' are equal. Both the cube and the sphere are solid and of the same material. They are being cast. Compute the ratio of the solidification time of the cube and sphere.   7

2. Discuss the working principle, applications and limitations of plasma arc welding. What are the important functions of coating of electrodes used in manual metal arc welding process ?   *14*

3. (a) Explain the principle of hydrostatic extrusion with neat sketches. What makes hydrostatic extrusion better than conventional extrusion process ? *7*

(b) Describe rolling mills. Discuss briefly the factors affecting the rolling process. *7*

4. (a) Explain the different types of shearing operations with neat sketches. *7*

(b) Discuss the different types of bending operations with diagrams. *7*

5. Discuss with the help of neat sketches the process of injection moulding of plastic components. How does this process differ from blow moulding ? Discuss the applications and limitations of both the processes. *14*

6. (a) Distinguish between soldering and brazing. *7*

(b) What are the different methods available for tube drawing ? Explain any one in detail. *7*

7. Write short notes on any *four* of the following :

$$4 \times 3\frac{1}{2} = 14$$

(a) Pattern Allowances

(b) Oxy-Acetylene Gas Welding

(c) Backward Extrusion

(d) Forging Die Materials

(e) Magnetic Pulse Forming