

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

Term-End Examination

00695

December, 2014

BIME-009 : PRODUCTION TECHNOLOGY – I

Time : 3 hours

Maximum Marks : 70

Note : Answer any *five* questions. All questions carry equal marks. Use of calculators is permitted.

1. Discuss the types and properties of moulding sands. What are the ingredients of a moulding sand mix ? Discuss the significance of each ingredient and its effect on mould characteristics. 14

2. Explain the process of resistance spot welding with the help of neat sketches. How is heat balance obtained in this process ? Why is the current, used in spot welding, larger than that for resistance seam welding ? 14

3. (a) Briefly discuss the theory of plasticity and yield criteria of Von-Mises and Tresca theory. 7

- (b) Explain impact extrusion process and give its applications. 7

4. (a) Explain the deep drawing operation with a neat sketch. Discuss its advantages and applications. 7
- (b) Discuss the different types of extrusion process. 7
5. What is electro-hydraulic forming? Discuss with neat sketches, its salient features, principle and specific applications. What are the limitations of this process? 14
6. (a) Discuss shear spinning process and mention its application. 7
- (b) Elaborate injection moulding process used for making plastic products. 7
7. Write short notes on any **four** of the following :
- $4 \times 3 \frac{1}{2} = 14$
- (a) Shell moulding process
- (b) Friction welding
- (c) Impression die forging
- (d) Forging defects
- (e) Blow moulding
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