

--	--	--	--	--	--	--	--

B.E DEGREE END SEMESTER EXAMINATIONS

Apr- May 2011

B.E. Material Science and Engineering

V SEMESTER

**ML 371 – THEORY & APPLICATIONS OF METAL FORMING (R 2004)**

Time: 3 Hrs

Max Marks: 100

**Answer ALL Questions**

**Part – A (10 x 2 = 20 Marks)**

1. Define the term "Octahedral shear stress".
2. What do you mean by the term "true strain"?
3. Define the term strain rate.
4. What is meant by residual stress?
5. Name various forging process.
6. How to calculate the rolling load for a plate of width 'w', thickness 't'.
7. What is the application of port hole extrusion die?
8. Differentiate between rod and wire.
9. What is the main difference between shallow drawing and deep drawing?
10. State the application of petroforge forming.

**Part –B (5 x 16 = 80 Marks)**

11. (i). Define the term stress tensor. (4)  
(ii). Discuss in detail the von mises and Trescas yeiled criteria. (12)
  12. (a) Differentiate between hot working, cold working and warm working. State its advantages and limitations. (16)
- (OR)
- (b) (i). Write a short notes on slip, twining and workability (8)  
(ii). Describe about the metallurgical structure in metal forming process. (8)
- 13 (a) (i). Differentiate between open die forging and closed die forging. (8)  
(ii). Write down the various forging defects along with their causes and (8)