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**B.E. (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2013**

Materials Science and Engineering

Seventh Semester

28

**ML 9033 – ROLLING AND FORGING TECHNOLOGY**

(Regulation 2008 )

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

**PART-A (10 x 2 = 20 Marks)**

1. Define the term "Bulk Deformation".
2. State the applications of bulk deformation process.
3. What is hot rolling?
4. Name the various miscellaneous rolling operations.
5. What is meant by cold swaging?
6. Write the various rolling defects.
7. Differentiate between open die and closed die forging.
8. What is meant by forgeability?
9. Define fullering and edging.
10. Write the requirements of die materials.

Part -B (5 x 16 = 80 Marks)

11. (a) (i) Write the general characteristics of bulk deformation process. (08)  
(ii) Describe the deformation mechanics of rod and wire drawing process for ideal deformation and ideal deformation with friction conditions. (08)
  12. (a) (i) Discuss the various rolling arrangements with neat sketches. (10)  
(ii) Write the applications and advantages of rolling process. (06)
- Or
- (b) Describe the mechanics involved in flat rolling process with neat sketches. (16)

13. (a) Explain the various stages in shape rolling process with neat sketches and write its advantages. (16)

Or

(b) Discuss the following processes with sketches.

(i) Thread rolling process (08)

(ii) Rotary tube piercing (08)

14. (a) (i) How are forging equipments classified? (04)

(ii) Explain the working principle of any two forging equipments with neat sketches. (12)

Or

(b) (i) Explain the term "Barrelling" with sketch. (08)

(ii) Determine the forces and work of deformation under ideal conditions in forging process. (08)

15. (a) (i) Write the advantages and applications of cold forging. (04)

(ii) Write short notes on the following forging operations.

a) Coining (03)

b) Heading (03)

c) Piercing (03)

d) Hubbing (03)

Or

(b) Explain briefly about the following tests with sketches.

(i) Upset test (08)

(ii) Hot torsion twist test (08)

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