Roll No.....

Total No. of Questions : 08] [Total No. of Pages : 02

Paper ID [PE503]

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MAY 2008

M.Tech. (Sem. - 1st)

METAL FORMING (PE - 503)

Time : 03 Hours **Maximum Marks : 100**

Instruction to Candidates:

1) Attempt any **Five** questions.
2) **All** questions carry equal marks.

Q1) (a) Describe the selection of stress-strain curve for cold and hot working.

(b) Explain in detail about Tresca maximum shear strain energy criterion.

Q2) (a) What does yielding of isotropic plastic material means?

(b) What is yield criteria?

(c) What is the roll of temperature in Quasi continues forming operation?

Q3) (a) What are different defects in Rolling process? What are their causes and remedial.

(b) Write short note on strain hardening function and Poisson's ratio for plastic deformation flow.

Q4) (a) Discuss about heat generation and heat transfer in metal forming process.

(b) Explain various parameters and variables which affects deep drawing process.

Q5) (a) Explain the prediction of work load and maximum deformation analysis of the processes of wire drawing.

(b) What are the various methods of tube drawing? Compare them.

Q6) Briefly discuss about following

(a) Lubrication in metal forming processes.

(b) True stress and true strain.

(c) Plastic incompressibility.

(d) Hydrodynamic and their film lubrication.

Q7) (a) Describe the classification of rolling mills.

(b) Explain the analysis of rolling process.

Q8) (a) Write note on (i) roll separating forces, (ii) torque on the roll, (iii) affect of front and back tension.

(b) Drive and explain working loads for plain strain forging strip under the condition of sticking of material with die.

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