

Please, Answer the following questions:-

Q1-[20 Marks]

a-) What are benefits from YIELD CRITERIA for Isotropic and Anisotropic elasto-plastic metals? And explain the all equations of these criteria. [15]

b-) Explain carefully the different methods to measure experimental strain of forming sheets. [5]

Q2- [20 Marks]

a-) Describe precisely, the all stress analyses in deep drawing at intermediate state under blank holder pressure with friction condition. [10]

b-) What is cracking and limiting drawing ratio? [5]

c-) What are special deep drawing processes? [5]

Q3- [20 Marks]

a-) What are types of shearing operations? [4]

b-) Draw fine sketch of force components in shearing. [4]

c-) What is the effect factors upon wear on blanking tools? [4]

d-) What are the errors on sheared edge workpieces? And how to prevent its? [4]

e-) Describe the fine blanking processes, and draw sketch of fine blanking die. [4]

Q4- [20 Marks]

a-) Draw a complete analysis for flat plate rolling stresses including frictional forces and velocities in roll. [10]

b-) What is effect of back and front tension stresses on the pressure distribution of the rolling? [5]

c-) What are several rolling mill stands? [5]

Q5- [20 Marks]

a-) What are basic types of material flow for filling die cavities? [5]

b-) What are qualitative distributions of radial and normal stresses in closed die forging with flash? [10]

c-) What effect of flash thickness on excess material and on normal pressure in the die-land? [5]

GOOD LUCK
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