

(Time : 3 Hours)

Total Marks : 80

**N.B. (1) Question no. 1 is compulsory.****(2) Attempt any three questions out of remaining five questions.****(3) Illustrate your answer with necessary sketch wherever necessary.****(4) Figures to the right indicate full marks.**

1. Attempt (**any four**) of the following : **(20)**
  - (a) Explain various methods of feeding the strip/coil material.
  - (b) With the help of suitable examples explain economic strip layout.
  - (c) Enlist the factors considered while selecting press for a particular application.
  - (d) Sketch Compound die and label all the parts.
  - (e) Write brief note on Selection of Press and Press setting
  
2. (a) Explain methods of reducing cutting forces in press. **(10)**
  - (b) With the help of neat sketches explain Spring Back phenomenon **(10)**
  
3. (a) A deep drawing operation is used to make a cup of diameter 48mm, height of 48mm & corner radius of 1.4mm from medium Carbon Steel material of 1mm thick. Design dies for the same. Yield strength is  $427\text{N/mm}^2$ ,  $C=0.65$ . **(10)**
  - (b) Explain with suitable sketches, the different stages in a shearing of a sheet metal. **(10)**
  
4. (a) Write selection of steel and its hardness for different elements of press tools **(10)**
  - (b) Define centre of pressure. Explain the steps to find the centre of pressure. With suitable component find its centre of pressure. **(10)**
  
5. (a) Explain overloading of Presses with respect to load and energy considerations. **(10)**
  - (b) A Press has minimum DLH 320 and adjustment of ram is 70mm. Stroke is variable and can be varied from 12mm to 100mm. If the bolster plate provided has a thickness of 70mm. Calculate minimum and maximum shut height for a die. **(10)**

6. Attempt (**any four**) of the following : **(20)**
- (a) State the important specifications of a press tool with its meaning.
  - (b) Compare between Coining and Embossing die.
  - (c) Describe different types of defects observed in drawn parts
  - (d) Differentiate between Mechanical Press and Hydraulic Press.
  - (e) Elaborate vision of Automation with respect to Press work.

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