

(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 427N/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.
