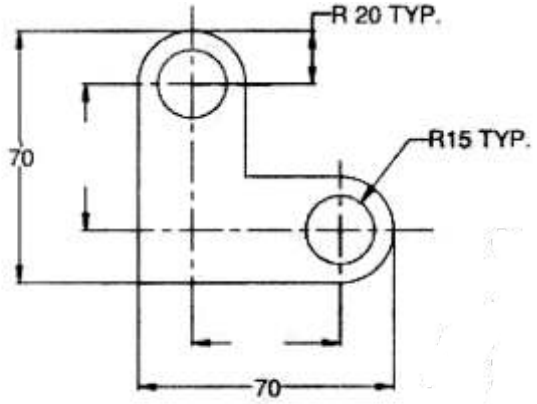
b) Calculate cutting load.

c) Draw front view and top view of Die.



Figure(1)

- Dimensions may be taken in mm.
- Assume suitable dimensions if not specified or clearly visible.

Q.24 a) Differentiate between mechanical press and hydraulic press.

b) Draw free hand sketches of stripper plates and punch plate.

Q.25 a) Discuss any two methods of holding a punch with their diagrams.

b) Explain the importance of percentage penetration in press die calculations.

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3rd Sem / Mechanical (Tool & Die Design)

Subject:- Press Tool - Design and Drawing

Time : 3Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 The cutting clearing in the press tool in maintained as

a) Clearance per side b) mm/meter

c) Total clearance d) None of these

Q.2 The best thickness of metal sheet for sheet metal operations is

a) 1 - 5mm b) 5 - 10mm

c) 7.5 - 10mm d) 0.4-6mm

Q.3 The material used for locator plate in a bending tool is _____

a) Mild steel b) High speed steel

c) Case hardening steel d) None of these

Q.4 A cutting operation in which a hole is partially cut from edge and then one side is bent down

a) Blanking b) Lancing

c) Punching d) Perforating

Q.5 How many dowel pins are used in press tool assembly

a) 2 b) 4

c) 6 d) 1

Q.6 As the clearance increases, the punch force required

a) Decreases

b) Increases

c) Remains the same

d) First increases then decreases

SECTION-B

Note: Objective type questions. All questions are compulsory. (6x1=6)

Q.7 Define strip layout.

Q.8 Give two applications of embossing.

Q.9 Name two die materials.

Q.10 Define curling.

Q.11 Name the three types of presses.

Q.12 Define knock out.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Explain the working of hand press.

Q.14 Differentiate between die clearance and die land.

Q.15 Explain various methods of strip guidance.

Q.16 Describe the function of shear angle with diagram.

Q.17 Explain the effect of stripping force and restoring force.

Q.18 Describe the BIS standards for bottom and top plates.

Q.19 Enlist the factors for selection of die for press tool operation.

Q.20 A 50x50mm square blank is to be cut in sheet metal of 4mm thick. The shear strength of material is 320N/m^2. Calculate the cutting force required.

Q.21 Describe the factors affecting die life.

Q.22 Explain the function of bushes and the types of bushes.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Design a progressive die for component in Figure (1) by giving following.

a) Calculate economic strip layout considering size 100mm x 100mm x 2mm thick from the stock material of mild steel of 400 N/mm^2 shear strength.