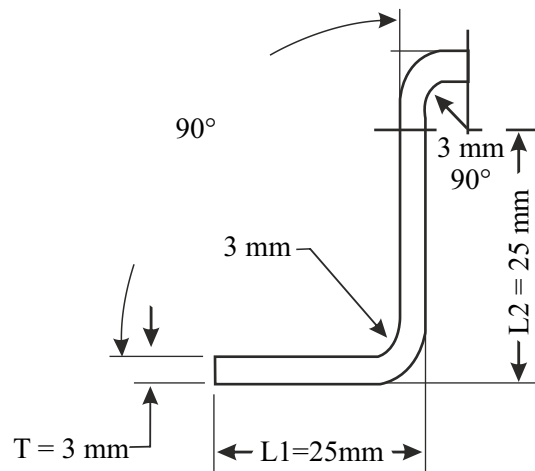


Figure 1

Q.25 Find the developed length for the bending part shown in figure (2) width 15 mm and UTS = 350 N/mm²



No. of Printed Pages : 4
Roll No.

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3rd Sem / Mechanical (Tool & Die Design)

Subject : Press Tool-Design and Drawing

Time : 3 Hrs.

M.M. : 60

SECTION-A

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

- Q.1 Function of stripper plate is
- Strip the die from the punch
 - Strip the stock from the punch
 - Strip off the die and the punch
 - All of the above
- Q.2 The best thickness of metal sheet for sheet metal operations is
- 1-5 mm
 - 5-10 mm
 - 7.5-10 mm
 - 0.4-6 mm
- Q.3 Which die can perform multi operation of blanking, piercing, notching
- Simple die
 - Progressive die
 - Compound die
 - Imperial die
- Q.4 Which of the following parts is used for holding the metal sheet during blanking operation?
- Spherical steel ball
 - Roller
 - Pressure pad
 - Magnet

- Q.5 Which of the following dies is not the type of cutting dies in the metal cutting operations?
- a) Squeezing dies b) Blanking dies
c) Piercing dies d) Notching dies
- Q.6 Which of the following materials is used for the manufacturing of dies and punches in the sheet metal forming?
- a) Grey cast iron b) Copper
c) Aluminium d) Carbide

SECTION-B

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

- Q.7 Define die cushioning.
- Q.8 What is the purpose of bushes?
- Q.9 Expand BIS
- Q.10 What is the purpose of feeding mechanism?
- Q.11 Define mass production.
- Q.12 Name the types of presses.

SECTION-C

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

- Q.13 Explain the need of shear in press tools.
- Q.14 Explain coining operation. How it is different from embossing.
- Q.15 Write short note on energy requirements in different bending operations.

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- Q.16 A 35 mm rectangular hole is to be cut in sheet metal of 1.5 mm thick. The shear strength of material is 300N/mm^2 . Calculate the cutting force required.
- Q.17 Explain the need of idle station in progressive dies.
- Q.18 Explain with sketches, the different stages in shearing of sheet metal.
- Q.19 Explain the feeding mechanism in presses in detail.
- Q.20 Explain bending allowance and spring back in bending operation.
- Q.21 Define 'Percentage Penetration' and explain its importance while designing press tools.
- Q.22 Write short note on grain direction in bending operation.

SECTION-D

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

- Q.23 a) Discuss two methods of holding a punch with suitable sketches.
b) Explain the method to reduce the cutting forces in press working operations.
- Q.24 Design a progressive die for component in figure (1) by giving following
a) Calculate economic strip layout considering size $400\text{mm} \times 1200\text{mm} \times 2\text{mm}$ thick from the stock material of mild steel of 400N/mm^2 shear strength.
b) Calculate cutting load
c) Draw front view and top view of Die

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