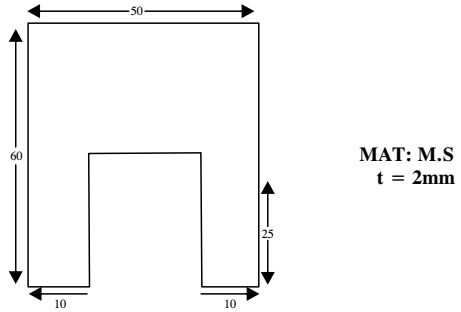
Q.30 Calculate the blanking force required to produce a blank of 100 mm diameter from a 1.5 mm thick sheet. The shear strength of the metal is 300 Mpa.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x20=40)

Q.31 Design and draw a die to procedure sheet metal components as shown in figure. The component is made of mild steel having ultimate shear strength of 700N/mm^2. your design should include:

1) Press tonnage calculations.
2) Selection of economic strip layout
3) Bill of materials
4) At least two views of the die



Q.32 Design & draw a bending tool for a sheet metal component. Show the suitable dimensions, clearances and angles.

Q.33 Design and draw a progressive tool by assuming it to perform two operations in one movement by assuming showing suitable dimensions, clearances and angles.

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3rd Sem / T&D, CNC (6th Sem), CAD/ CAM(6th Sem)

Subject:- Press Tool - Design and Drawing

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 Presses are generally employed in_____ production of_____ components.

a) mass, identical b) mass, dissimilar
c) job, identical d) job, dissimilar

Q.2 Punching is a cutting operation for producing desired shape and size hole in the product.

a) True b) False

Q.3 By which operation a cup is formed from a flat blank

a) Trimming b) Drawing
c) Forming d) Bending

Q.4 A thick plate fastened to the bed of the press which supports and holds the die assembly, is known as

a) Supporting plate b) Bolster plate
c) Holding plate d) Rigid plate

Q.5 Which of the following help in obtaining correct alignment of the punch holder with the die shoe?

a) Guide posts b) Stops
c) Pilot d) None of the above

Q.6 In which of the following type of die, a combination of cutting and some other operation can be performed at a single station?

a) Cutting die b) Forming die
c) Compound die d) Combination die

Q.7 The following die is used for two or more cutting operations in single stroke of the ram?

a) Forming die b) Compound die
c) Combination die d) All of the above

Q.8 Which of the following is power press?

a) Hand press b) Fly press
c) Hydraulic press d) All of the above

Q.9 The maximum shear force required for punching depends on_____

a) Speed of the flywheel
b) Length of the plate
c) Sheared area
d) Total load

Q.10 In drawing operation, increase of die radius_____

a) Punch load depends on other factors
b) Does not influence the punch load much
c) Punch load increases
d) Has much influence on punch load and its decreases
e) None of the above

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Mass production

Q.12 Press tool
Q.13 Notching
Q.14 Curling
Q.15 Guide plate
Q.16 Bush
Q.17 Compound tool
Q.18 Forming tool
Q.19 Shear angle
Q.20 Strip layout

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x5=40)

Q.21 The selection of press depends upon various factors. Write these factors.

Q.22 Write in brief about "Principle of shearing".

Q.23 Describe the function of bushes and enlist the material used for them?

Q.24 Explain the working of a compound die with sketch.

Q.25 Write in brief about shallow drawing and deep drawing.

Q.26 What are press tools? How their applications in industries are useful?

Q.27 Write short note on material utilization.

Q.28 What are the BIS standards for bottom, top pillars?

Q.29 A punching of 10mm circular blank of thickness 1 mm is done using sheet metal of yield shear stress of 240 Mpa. Calculate the size of the round die in mm.