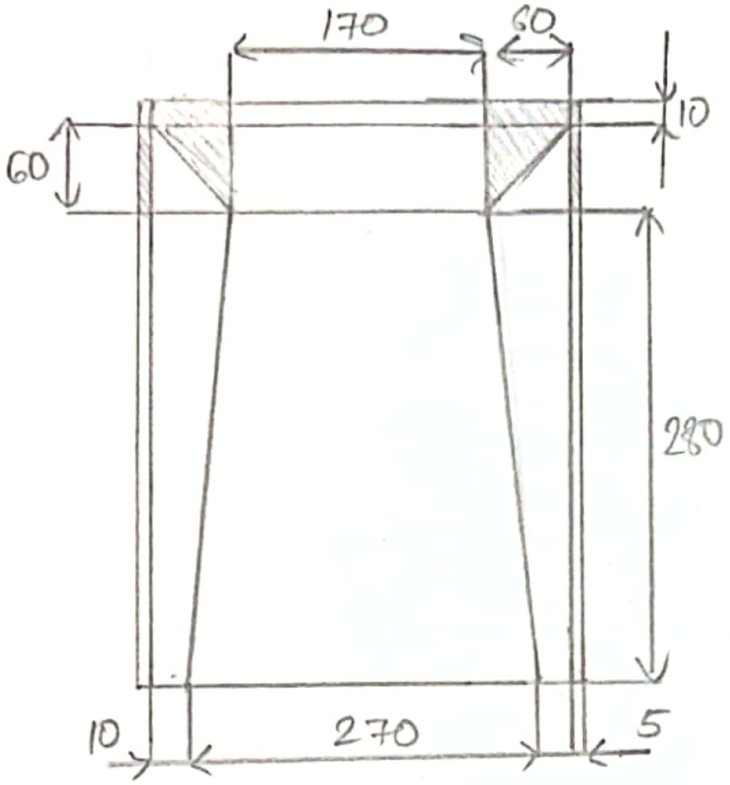
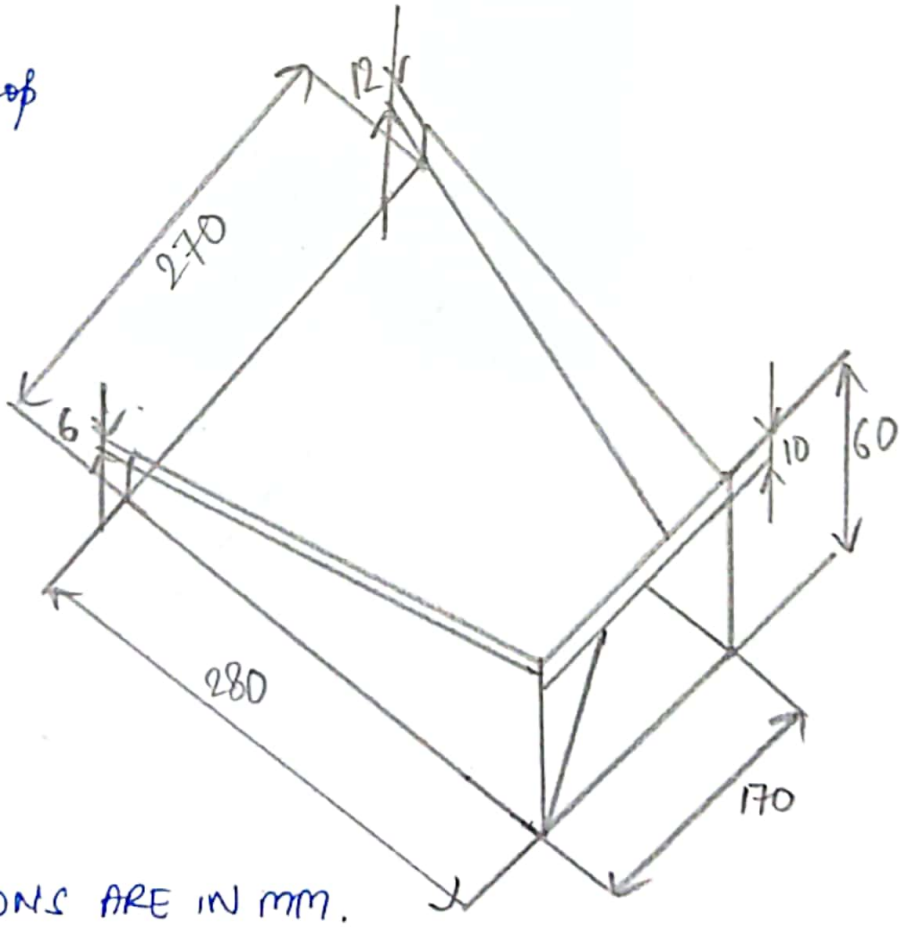
EXP: 4
DATE: 24-11-21

SCOOP MAKING

(1) Layout of scoop



(2) Finished scoop



ALL DIMENSIONS ARE IN MM.

▨ → UNWANTED PORTION.

* 3D MODEL

★ AIM:

To make a big scoop of given specification from a sheet metal piece.

★ APPLICATION:

It's a device use to carry, pick and transfer the things.

★ MATERIAL SPECIFICATIONS:

(1) Material: Galvanised iron.
(2) Sheet of dimensions: 300 mm x 350 mm thickness 33 gauge.

★ TOOLS REQUIRED:

- (1) Steel rule (2) Scriber (3) Straight snip (4) Stake (5) Anvil (6) Mallet.

★ SEQUENCE OF OPERATION:

(1) Checking (2) Layout marking (3) Shearing (4) Folding and Finishing.

★ WORKING STEPS:

(1) Checking:

→ Check whether the given sheet is having its dimension as 300 mm x 350 mm. If the dimension is excess trim off using hand shear. If it's less change the given sheet.

(2) Layout marking:

→ Place the given sheet over working table, so that side of dimension 350 is horizontal.

→ From reference point to draw the vertical line 280mm, 60 mm and remaining portion 10 mm for hemming allowance.

→ Now place 300 mm side, first to be draw 5 mm line both sides. These line provided for hemming. Next to be marked 10 mm both sides.

→ On the 280 line to be mark both side 60 mm point. Then draw vertical line at both points. Connect the points above & below.

→ Now you get square on top corner both side and draw the diagonal line from the bottom.
→ Draw Hatch line shown in figure.

(3) Shearing:
→ Remove the unwanted portion shown in figure / layout with the help of snip.
→ While cutting, cut along the proper line and remove the unwanted portions.

(4) Folding:
→ Keep the pattern over square and fold the 5mm hemming portion with 180° towards marking side.
→ Then fold 60 mm height portion with 90° opposite to marking side.
→ Again fold two slant lines opposites to the marking side.
→ The scoop is having two incomplete corners. In align the corner at stake, fold the triangular shape both side with help of mallet.

(5) Locking and Finishing
→ Fold the remaining portion 180° outwards using stake and mallet to lock the folds.
→ To make perfect shape using mallet.
→ Check for the dimension.

★ PRE AND POST LAB QUESTIONS:

Q1. What type of material is used in sheet metal generally?
Ans= Galvanised steel (coated with zinc) generally used in sheet metals.

Q2 Explain the use of scoop.
Ans Scoops are used for carrying, picking and transferring soil, sand, aggregates or any other material or powder

Q3. What is the minimum and maximum sheet metal thickness?

Ans: Minimum thickness is 0.5 mm and maximum is 6 mm.

Q4. Mention the least count of steel rule?

Ans: Least count of steel rule : 0.5 mm

Q5. Define layout.

Ans: The design or arrangement of something laid out on sheet metal is called layout. Basically, the marking which are done on sheet for making an item comes under layout.

Q6. What purpose the anvil is used for?

Ans: The anvil is used as a forging tool. Anvil is an important smith's tool. It is used for supporting the work while hot metal hammering.

Q7. Which tool used for measuring the thickness of sheet metal?

Ans: Wire Gauge is used for measuring the thickness of sheet metal.

Q8. Mention the diagonal angle of scoop making.

Ans: The diagonal angle in scoop making 45°.

Q9. At what stage the sheet metal is called as pattern?

Ans: After cutting the unwanted portion of the sheet the help of snip, the stage where we are left with required sheet for folding, that stage is called pattern.

Q10. What is GI sheet? Why is it called so?

Ans: GI sheet means galvanising iron sheets. In galvanising process the zinc coating is done on the iron or steel to make it rust free. So, GI sheets are stainless steel sheets galvanised with zinc.

RESULT:

Thus the required scoop is made out of the given sheet metal piece as per the specification.