TECHNICAL DRAWING APPLICATIONS

(*Three hours)*

*Answers to this paper must be written **neatly** on the paper provided separately.*

*You will **not** be allowed to draw/write during the first 15 minutes.*

This time is to be spent in reading the question paper.

The time given at the head of the paper is the time allowed for writing the answers.

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*Attempt **five** questions in all.*

*You must attempt **three** questions from **Section A** and **two** questions from **Section B***

Each section should be answered on a separate paper.

All questions must be answered in full scale.

All construction lines must be shown.

All dimensions are in millimeters unless specified otherwise.

The intended marks for question or parts of questions are given in brackets [ ].

SECTION A (48 Marks)

*Answer any **three** questions from this section.*

Question 1.

Refer to **Figure 1** given below. [16]

Copy the figure using the scale 1:1.

(Insert any 4 dimensions.)

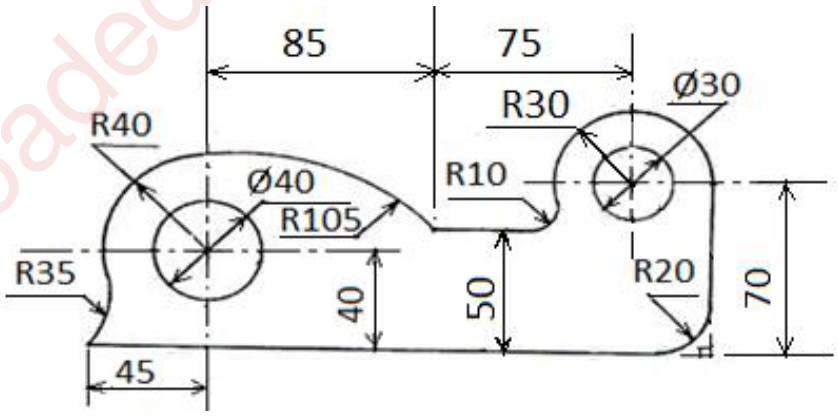

Figure 1

Question 2.

(a) Construct a parabola by the **RECTANGLE METHOD**. [10]

Given :- Base = 165mm

Length of axis =100mm.

(b) Draw a circle of radius = 35mm. [6]

Circumscribe it with a regular pentagon so that all the sides of the pentagon are tangents to the circle.

Question 3.

On a working drawing, a line measuring 30mm was dimensioned as 8m. Find R.F. Using the same R.F. construct a **PLAIN SCALE** long enough to measure up to 40m. Show the data and the working neatly. [16]

Taking the measurements from this scale, draw a transverse common tangent to two equal circles each of radius 9m and distance between their centres = 37m.

Question 4.

A right circular cone has its axis parallel to the horizontal plane and inclined at 45° to the vertical plane. Its base is nearer to the vertical plane than its apex. [16]

Draw the:

(a) Elevation

(b) Plan

Given: - Radius of the base = 25mm

Length of the axis = 70mm.

Use the **THIRD ANGLE METHOD** of projection.

Question 5.

Refer to **Figure 2** given below. It shows the elevation and the plan of an object in the **FIRST ANGLE METHOD** of projection. [16]

Draw the **OBLIQUE VIEW** when the receding axis is inclined at 45° to the horizontal.

(Do not insert any dimensions.)

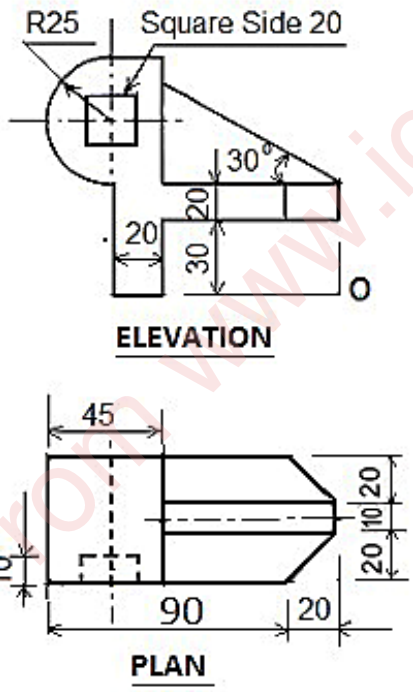

Figure 2

SECTION B (52 Marks)

*Answer any **two** questions from this Section.*

Question 6.

Refer to **Figure 3** given below. It shows the elevation and the plan of an object in the **FIRST ANGLE METHOD** of projection. [26]

Draw its **ISOMETRIC VIEW**.

Use scale 1:1.

(Do not insert any dimensions.)

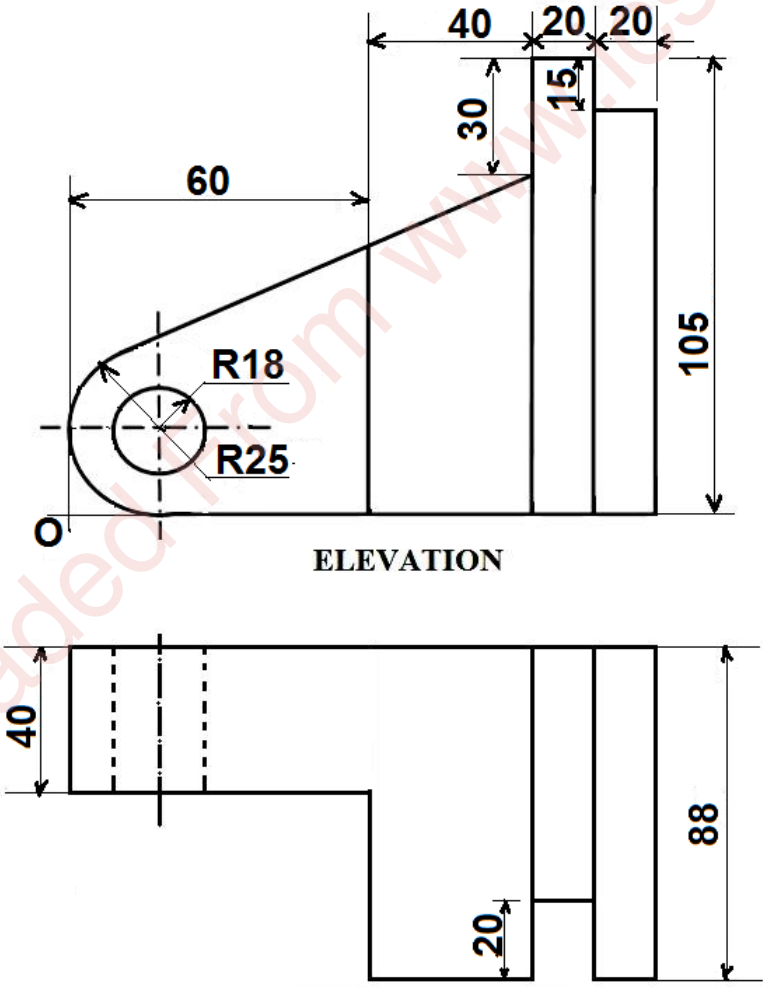

Figure 3

Question 7.

Refer to **Figure 4** given below. Using the **FIRST ANGLE METHOD** of projection, draw the:

(i) Half Sectional Front View [section along A-B-C] [10]

(ii) Top View [8]

(iii) Left Hand Side View. [8]

(Insert any 8 dimensions.)

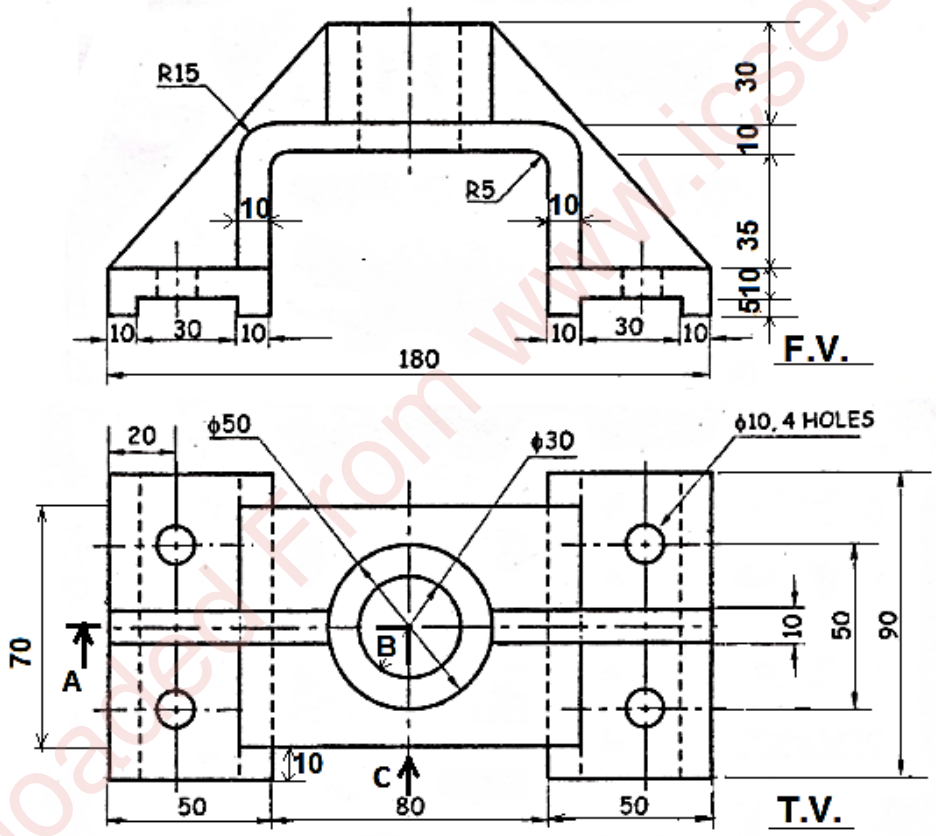

Figure 4

Question 8.

Refer to **Figure 5** given below. It shows the front view and the top view of a right circular cylinder in the **THIRD ANGLE METHOD** of projection. Its axis is perpendicular to the horizontal plane and parallel to the vertical plane. It is cut by a cutting plane inclined at 60° to the horizontal plane and perpendicular to the vertical plane. The vertical trace (V.T.) of the cutting plane is shown in the figure. Draw the :

(i) Front View [3]

(ii) Sectional Top View [6]

(iii) True Shape of Section [7]

(iv) Development of Lateral Surface of the remaining part P of the cylinder. [10]

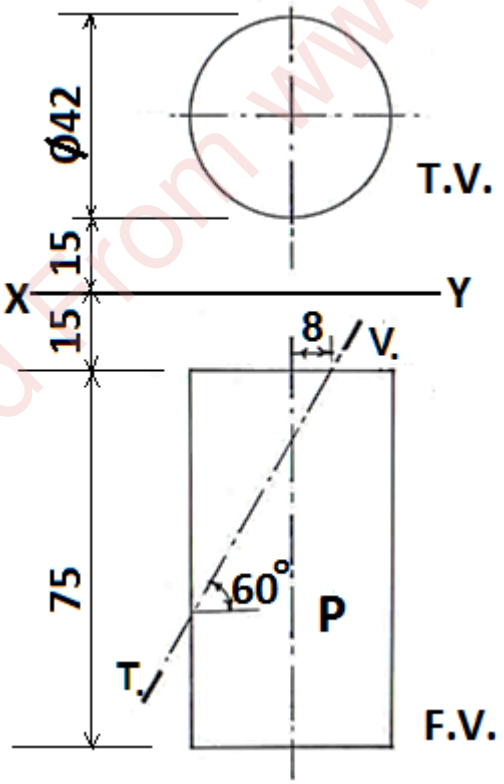

Figure 5