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**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.*

*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.*

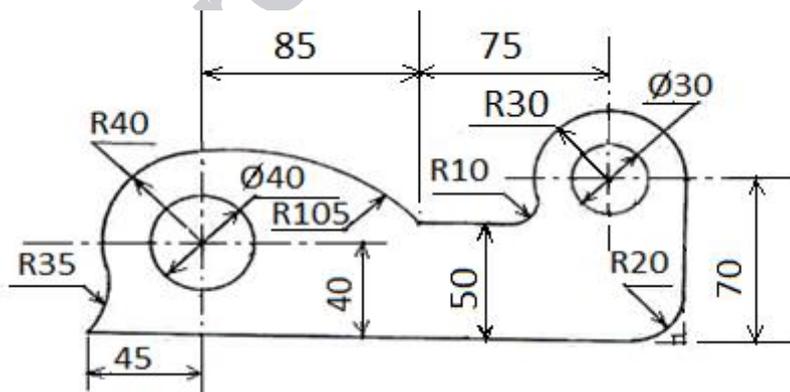
**Question 1.**

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 [16]  
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.

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 [16]  
 $45^\circ$  to the vertical plane. Its base is nearer to the vertical plane than its apex.

Draw the:

- (a) Elevation

- (b) Plan

Given: - Radius of the base = 25mm

Length of the axis = 70mm.

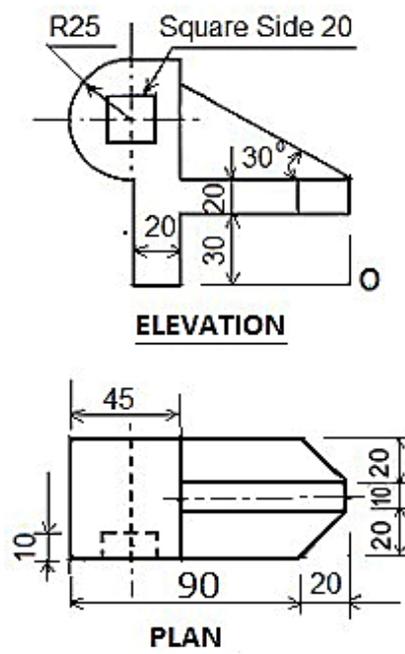
Use the **THIRD ANGLE METHOD** of projection.

**Question 5.**

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

Draw the **OBLIQUE VIEW** when the receding axis is inclined at  $45^\circ$  to the horizontal.

(Do not insert any dimensions.)



*Figure 2*

**SECTION B (52 Marks)**

Answer any *two* questions from this Section.

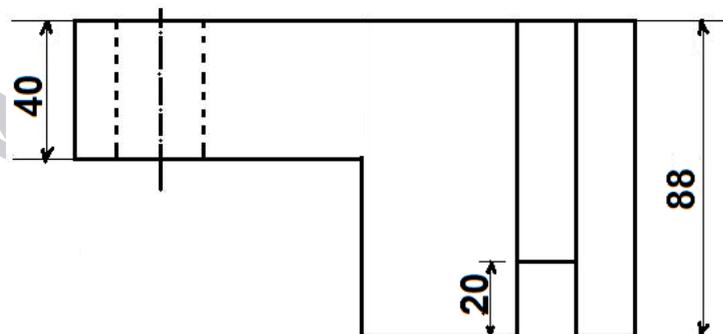
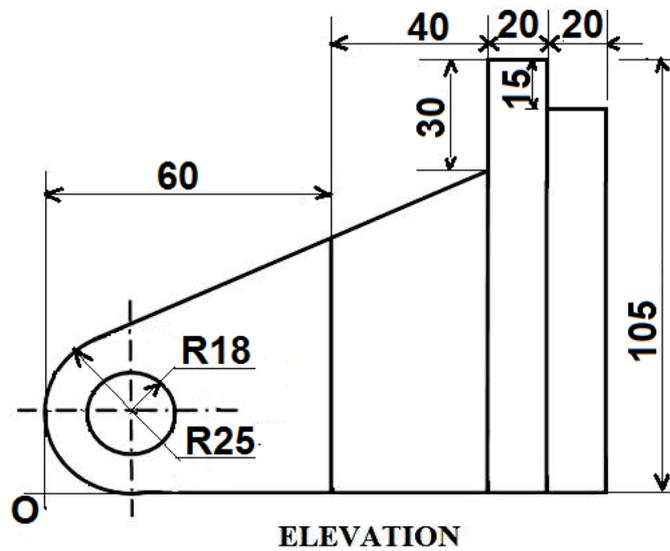
**Question 6.**

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

Draw its **ISOMETRIC VIEW**.

Use scale 1:1.

(Do not insert any dimensions.)



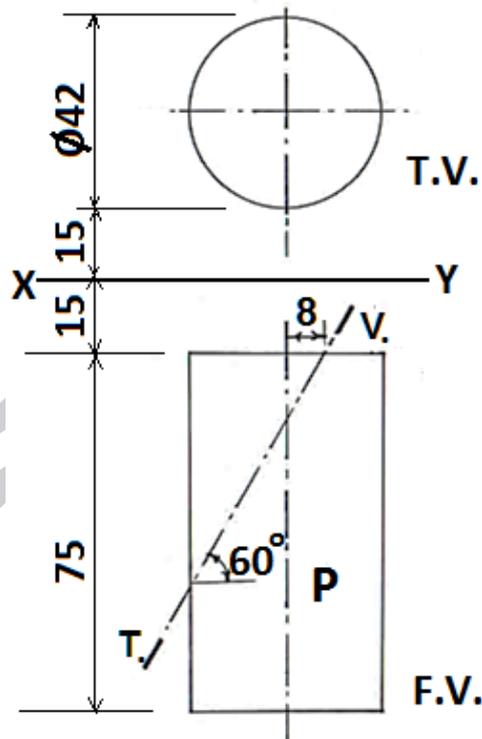
*Figure 3*



**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  $60^\circ$  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*