F6000829

TECHNICAL DRAWING APPLICATIONS

Maximum Marks: 100

Time allowed: Three hours

1. *Answers to this Paper must be written on the paper provided separately.*
2. *You will **not** be allowed to write during the first **15** minutes.*
3. *This time is to be spent in reading the question paper.*
4. ***The time given at the head of this Paper is the time allowed for writing the answers.***

5. *Attempt **five** questions in all.*
6. *You must attempt **three** questions from **Section A** and **two** questions from **Section B.***
7. *Each section should be answered on a separate paper.*
8. *All questions must be answered in full scale.*
9. *All construction lines must be shown.*
10. *All dimensions are in millimetres unless specified otherwise.*
11. *The intended marks for questions or parts of questions are given in brackets[ ].*

Instruction for the Supervising Examiner

Kindly read aloud the Instructions given above to all the candidates present in the Examination Hall.

SECTION A (48 Marks)

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

Question 1

In a working drawing, a line measuring 20 cm was marked as 5 m. Calculate the R.F. [16]
(Representative Fraction).

Construct a **DIAGONAL SCALE** which has the same R.F. and is long enough to measure up to 7 m. Show the data and working neatly.

Taking measurements from the scale constructed, draw a parallelogram ABCD given side AB = 2.25 m, side AD = 0.87 m and ∠DAB = 60°. Then construct a triangle of area equal to the area of the parallelogram.

Question 2

(i) Construct a triangle ABC of Perimeter 155 mm and with ratio of the sides AB : BC : CA = 3 : 5 : 4. Show all construction lines. [6]

(ii) **Figure 1** given below shows the Front View (F.V.) and the Top View (T.V.) of a cone with axis perpendicular to the vertical plane and parallel to the horizontal plane in the **FIRST ANGLE METHOD** of projection. [10]

Draw the Auxiliary Front View of the Cone. The auxiliary plane X_1Y_1 is shown in the figure.

Given: Radius of the base = 25 mm

Length of Axis = 80 mm

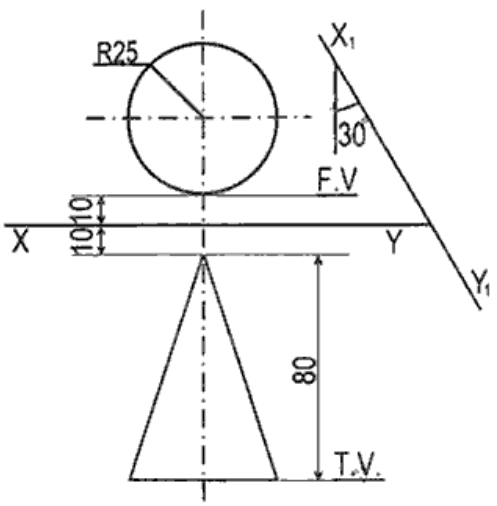


Figure 1

Question 3

Refer to **Figure 2** given below. It shows the Front View (F.V.) and the Top View (T.V.) of an object in the **FIRST ANGLE METHOD** of projection. Draw the **OBLIQUE VIEW** when the receding axis is inclined at 45° to the horizontal. [16]

(Do not insert any dimensions.)

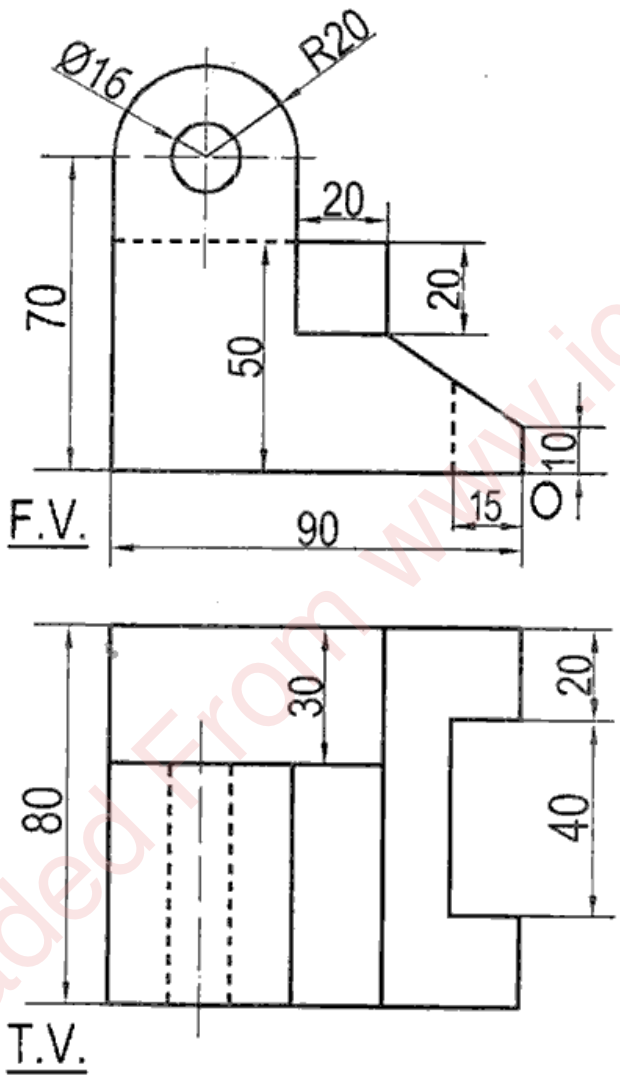


Figure 2

Question 4

(i) Inscribe three equal circles in a given equilateral triangle of side 100 mm, in such a way that each circle will touch two sides of the triangle and two other circles externally. [8]

(ii) Draw a direct common tangent to two circles, one with centre A and radius 40 mm and the other with centre B and radius 25 mm. The distance between the two centres is 125 mm. Measure and record its length in 5 mm guidelines. [8]

Question 5

Refer to **Figure 3** given below. Copy the given template. [16]

(Insert all dimensions.)

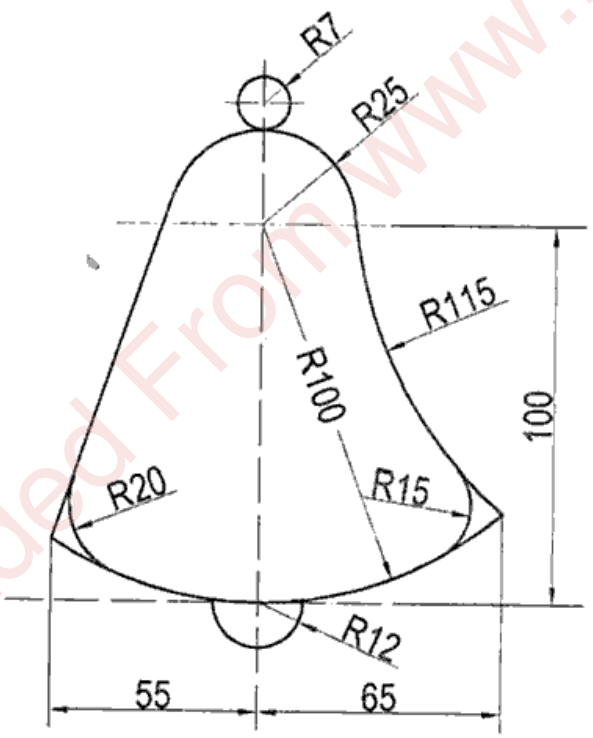


Figure 3

SECTION B (52 Marks)

Answer any two questions from this section.

Question 6

Refer to **Figure 4** given below. It shows the Front View (F.V.) and the Top View (T.V.) of a right square pyramid in the **THIRD ANGLE METHOD** of projection. Its axis is perpendicular to the Horizontal Plane (H.P.) and parallel to the Vertical Plane (V.P.). The pyramid is cut by a cutting plane inclined at 30° to the H.P. and perpendicular to the V.P. The Vertical Trace (V.T.) of the cutting plane is shown in the figure. [26]

Using **FIRST ANGLE METHOD** of projection draw the:

(i) Front View

(ii) Sectional Top View

(iii) Sectional Left Hand Side View

(iv) Auxiliary Top View

Given: Side of base = 40 mm, Length of axis = 75 mm

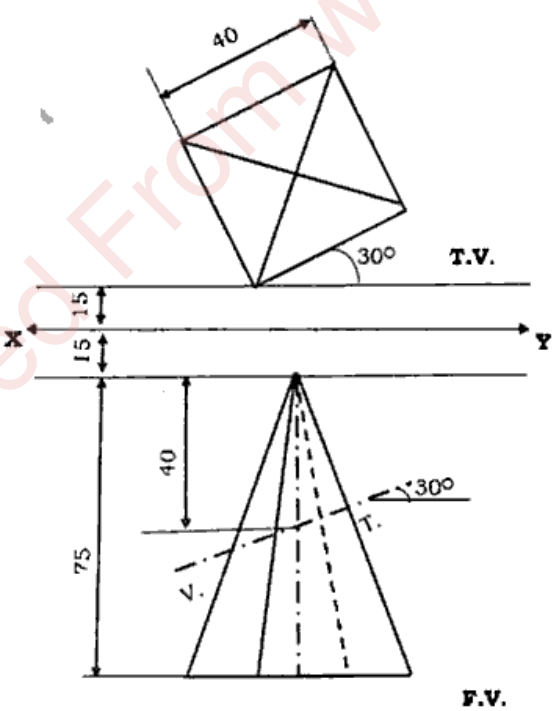
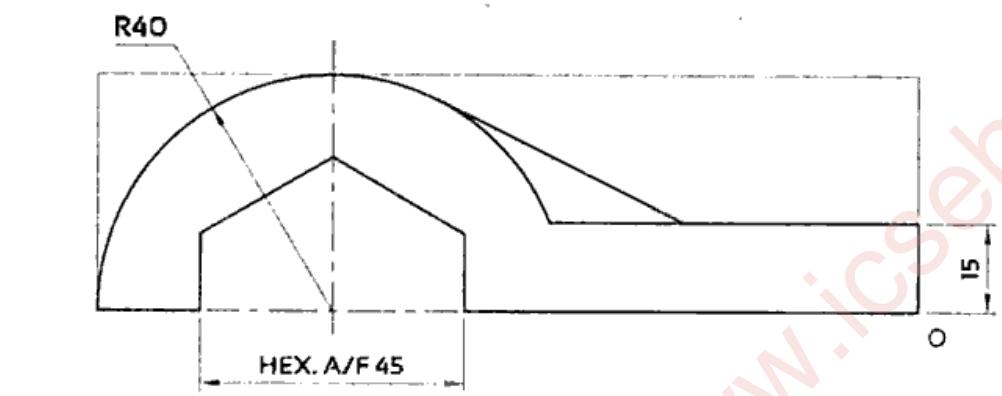


Figure 4

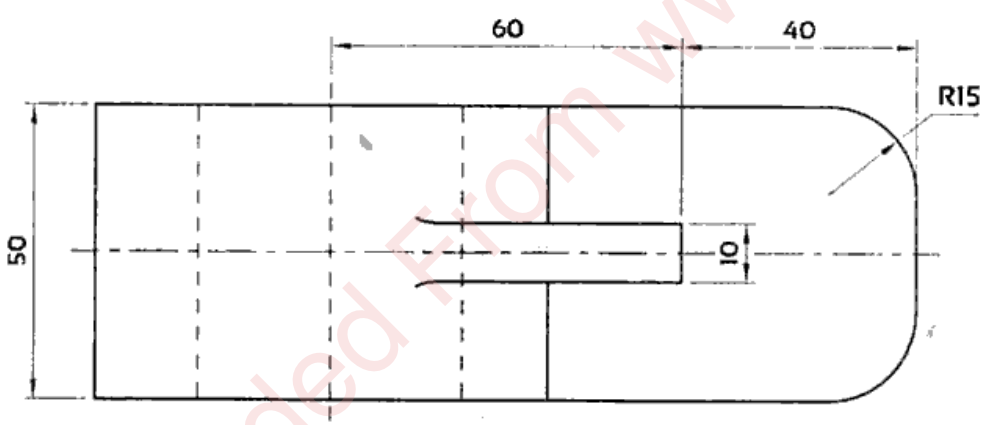
Question 7

Refer to **Figure 5** given below. It shows Front View (F.V.) and Top View (T.V.) of a machine block in **FIRST ANGLE METHOD** of Projection. Draw the **ISOMETRIC VIEW.** [26]

(Do not insert any dimensions.)



F.V.



T.V.

Figure 5

Question 8

Refer to **Figure 6** given below. [26]

Using the **FIRST ANGLE METHOD** of projection, draw the:

(i) Sectional Front View [Section along A–A]

(ii) Top View

(iii) Left Hand Side View

(Insert any six dimensions.)

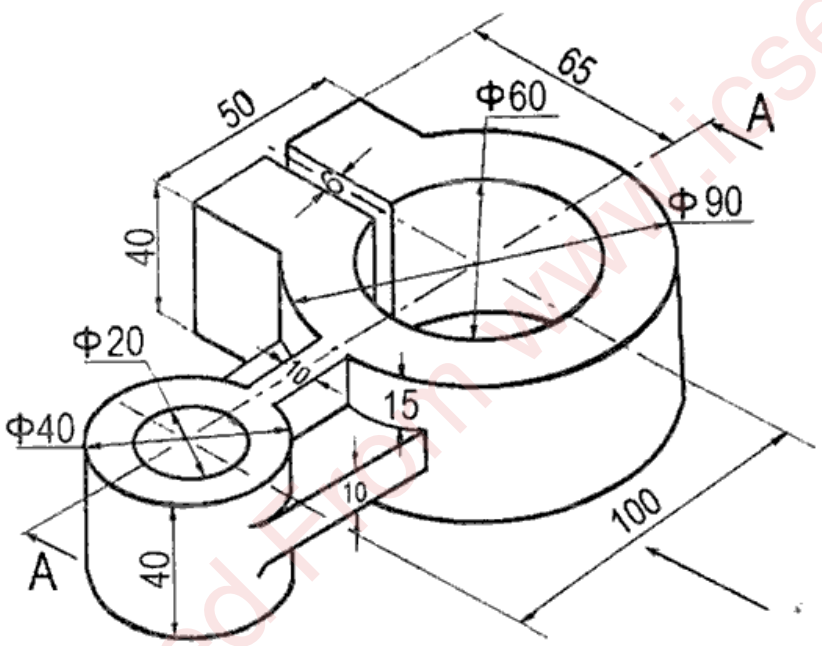


Figure 6