16117

4 Hours / 100 Marks   Seat No.

Instructions : (1) All Questions are *compulsory*.

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

(8) Use drawing sheets only.

                                                                    Marks

1.   **Attempt any FIVE of the following :**   **20**

(a) Explain construction of Plain Scale.

(b) State uses of :

(i)   Metric scale

(ii)   Lengthing bar

(iii) Set square

(iv)   T-square

    (c)   Draw the sketches of conventional representation of the following as per IS 1962.

        (i)   Brick

        (ii)   Single leaf single swing door

        (iii) Stone

        (iv) Wood

    (d)   Divide a straight line of 105 mm into seven equal parts.

    (e)   Construct a pentagon, the length of side is 50 mm.

    (f)   Draw two lines AB and AC making an angle of 75°, Draw a circle of 25 mm radius touching them.

    (g)   Construct a rectangle of sides 60 mm and 35 mm long.

2.   **Attempt any TWO of the following :**   **16**

    (a)   Draw the projection of a hexagonal pyramid, base 40 mm side and axis 60 mm long, having its base on the H.P. One of the edge of the base inclined at 45° to the V.P.

    (b)   Draw free hand sketches of any four furniture items used in a bedroom of a residental flat. Also state the dimensions.

    (c)   (i)   Construct a square of 30 mm side. Draw outside it four equal circles, each touching a side of the square and two other circles.

        (ii)   A rectangular Lamina PQRS is perpendicular to H.P. and inclined at 45° to V.P. Draw its projection.

3.   **Attempt any TWO of the following :**   **16**

    (a)   Draw the development of a square prism having side of base 40 mm and axis height 100 mm.

    (b)   Draw projections of a circle of 50 mm diameter having its plane inclined at 30° to H.P. and perpendicular to V.P. its centre is 30 mm infront of V.P. and 25 mm above H.P.

(c) The length of the top view of a line parallel to the V.P. and inclined at 45° to the H.P. is 50 mm. One end of the line is 12 mm above H.P. and 25 mm infront of the V.P. Draw the projections of the line and determine its true length.

4. Attempt any TWO of the following : **16**

(a) Draw an orthographic projection of dining table (wooden) of size 1400 mm × 900 mm × 700 mm (overall). Assume suitable dimensions of supporting members and use suitable scale.

(b) Draw the development of a pentagonal pyramid of side of base 50 mm and altitude 70 mm.

(c) (i) Construct a square of side 70 mm with T-square and set square method only.

(ii) How will you measure furniture with different scale ? Show examples.

5. Attempt any TWO of the following : **16**

(a) Draw the orthographic projection of a centre table of size 900 mm × 750 mm × 450 mm height. Assume suitable size of supporting members use suitable scale.

(b) A square prism, base 40 mm side and axis 80 mm long, has its base on the H.P. and its faces equally inclined to the V.P. It is cut by a plane, perpendicular to V.P. and inclined at 60° to H.P. and passing through a point on the axis 55 mm above the H.P. Draw the front view, sectional top view and true shape of the section.

(c) Draw the development of surface for a square prism having side 90 mm and height 75 mm respectively.
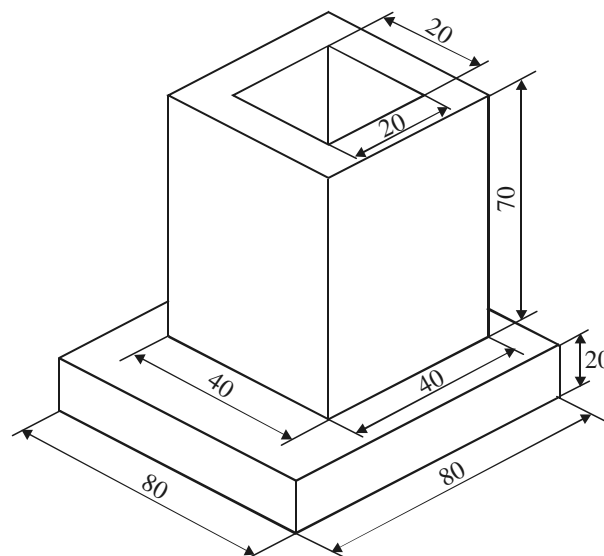
6. **Attempt any TWO of the following :** 16

   (a) Fig. No. 1 shows pictorial view. Draw to full size scale (i) Front view in the direction of 'X'. (ii) Top view.
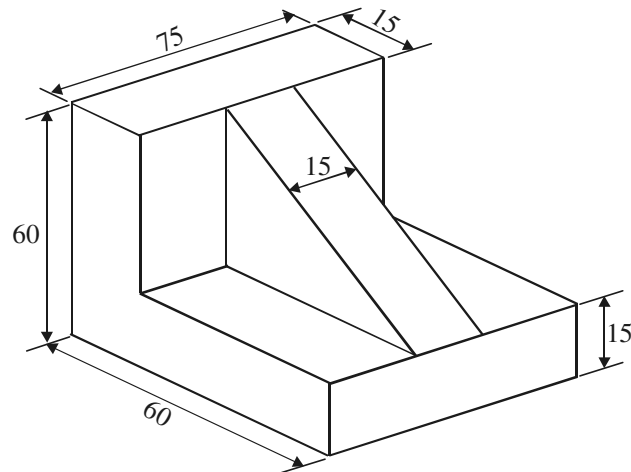
Fig. No. 1

All dimensions are in mm.

   (b) Fig. No. 2 shows pictorial view of an object draw (i) Front view in the direction of 'X', (ii) Top view use suitable scale.

Fig. No. 2

All Dimensions are in mm.

   (c) Construct a scale of 1 : 50 showing meters and decimeters and to measure upto 8 meters show the length of 5.40 meters on it.