I B. Tech II Semester Regular Examinations August - 2014
ENGINEERING DRAWING
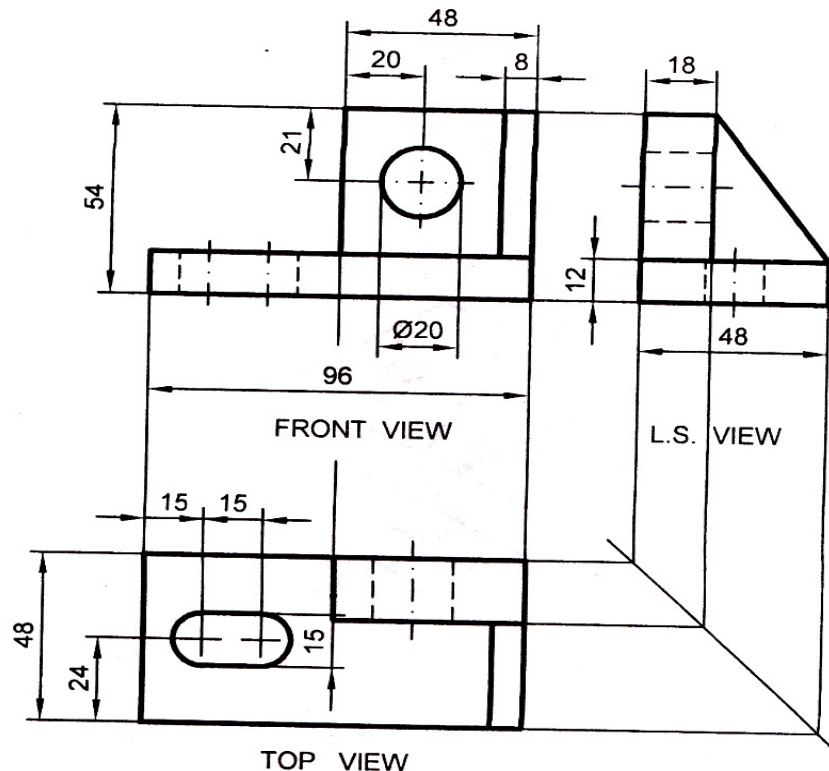**(Mechanical Engineering)**

Time: 3 hours   **Max. Marks: 70**

Question Paper Consists of **Part-A** and **Part-B**
Answering the question in **Part-A** is Compulsory,
Three Questions should be answered from **Part-B**
*****

PART-A

1.(a)   Draw the isometric view of the following orthographic projections?

(b)   A straight line AB, 60mm long, makes an angle of 30^0 to the HP and 60^0 to the VP. The end A is in the VP and 20mm above the HP. Draw the projections of the line AB?

[16+6]

PART-B

2.(a)   Inscribe an ellipse in a parallelogram having sides 150mm and 100mm long and an included angle of 120^0?

(b)   Draw a full size diagonal scale to show 0.1 millimeters long enough to measure up to 5 centimeters Show on this scale the following distances.
2.35 centimeters

[8+8]

||"|"||"||""'|

3.(a) Draw the projections of a line EF 40mm long parallel to the HP and inclined at 35^0 to the VP. E is 20mm above the HP and 15mm in front of the VP?

  (b) Draw the projections of a 60mm long straight line in the following positions:
      (i) Parallel to both the HP and the VP and 25mm from each.
      (ii) Perpendicular to the VP, 25mm above the HP and its one end in the VP.
      (iii) Inclined at 45^0 to the VP, in the HP and its one end in the VP.

[10+6]

4. The end A of line AB is 10mm above the HP and 30mm in front of the VP. The end B is 50mm below the HP and 15mm behind the VP. The length of the line is 80mm. Draw the projection and locate the traces. What are the inclinations of the line with the reference planes?

[16]

5. A thin hexagonal plate of 35mm side has a central equilateral hole of side equal to that of the plate. The plate is kept in such a way that one of its edges is parallel to the ground and inclined at 30^0 to the VP. The plate makes 45^0 with ground. Draw the projections of the plate and the hole. A side of the hole is parallel to the ground?

[16]

6. Draw the projection of a pentagonal prism, base 25 mm side and axis 50mm long, resting on one of its rectangular faces on the HP, with the axis inclined at 45^0 to the VP.

[16]

7. Draw (i) Front view (ii) Top view and (iii) Side view of the following pictorial projections?
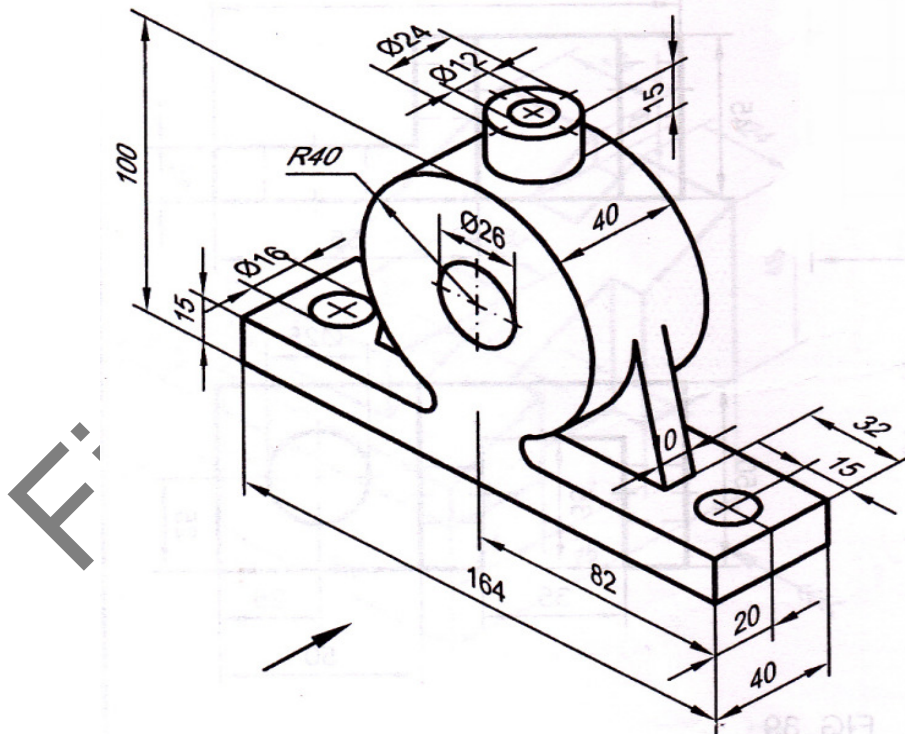
[16]

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ENGINEERING DRAWING
(Mechanical Engineering)

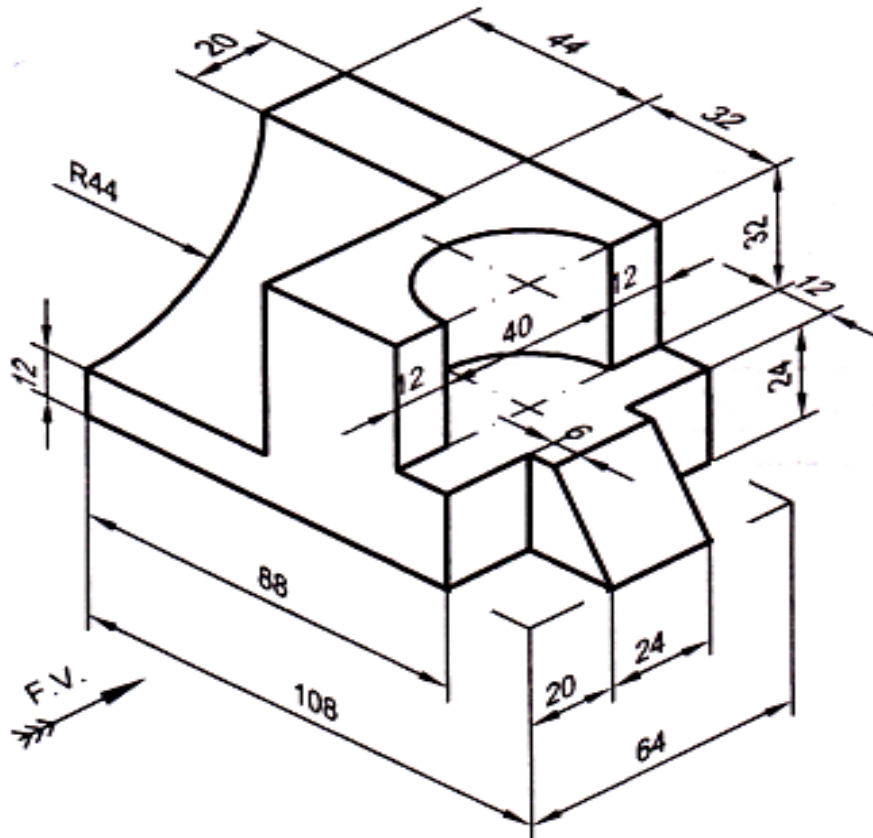**Time: 3 hours**   **Max. Marks: 70**

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*****

PART-A

1.(a) Draw (i) Front view (ii) Top view and (iii) Side view of the pictorial drawing shown below?

(b)   A circular plate of negligible thickness and 50mm diameter appears as an ellipse in the front view, having its major axis 50mm long and minor axis 30mm long. Draw its top view when the major axis of the ellipse is horizontal.

[16+6]

PART-B

2.(a)   A plot of ground is in the shape of a rectangle 110m×50m. Inscribe an elliptical lawn in it. Take a suitable scale?

(b)   Construct a regular hexagon of 40mm side. Using general method?

[8+8]

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3.(a)   Draw the FV, TV of the following points:
(i)   Point P lies in the HP and 20mm behind the VP
(ii) Point Q lies in the VP and 30mm below the HP
(iii) Point R lies 35mm below the HP and 25mm behind the VP

(b)   Two points M and N lie in the VP. The point M is above the HP and the point N is 40mm below the HP. The perpendicular distance between their projectors is 60mm. The line joining M and N makes 60^0 with XY. Draw the projections of the points. Find the height of point M from the HP?

[8+8]

4.   FV of a line measures 70mm and makes an angle of 30^0 with XY. The end A is in the HP and the VT of the line is 10mm below XY. The line is inclined at 45^0 to the VP. Draw the projections of the line and find its TL and true inclinations with the HP and locate the HT?

[16]

5.   A regular pentagonal lamina of 30mm sides has one edge in the HP and inclined at an angle of 30^0 to the VP. Draw its projections when its surface is inclined at 45^0 to the HP?

[16]

6.   A cone of diameter 60mm and height 60mm is resting on the HP on one of its generators. Draw its projections if its axis is parallel to the VP?

[16]

7.   Draw the isometric view of the orthographic projections shown below?
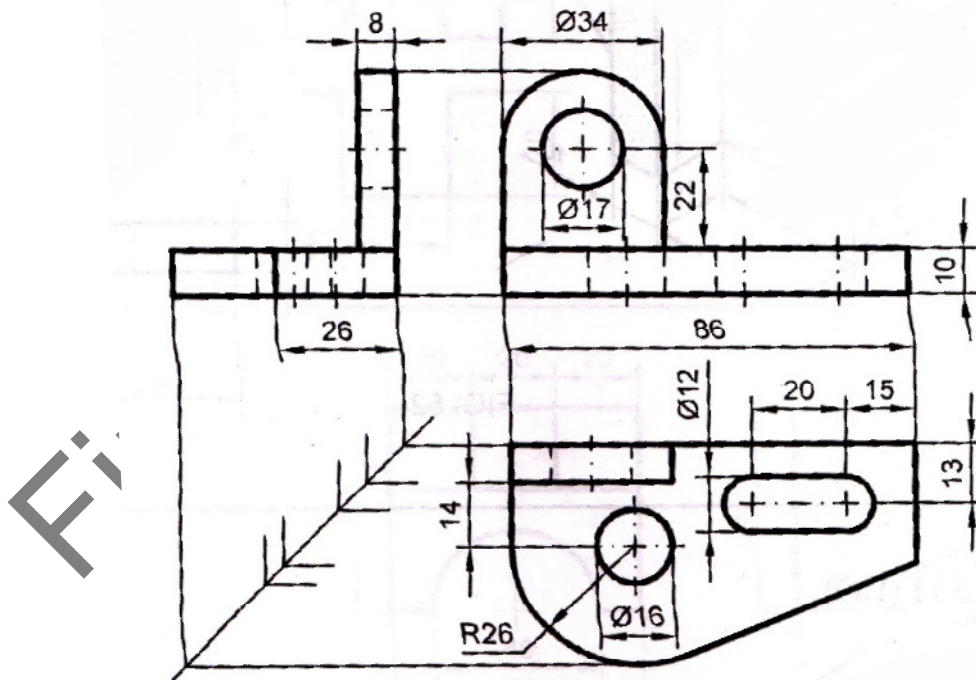
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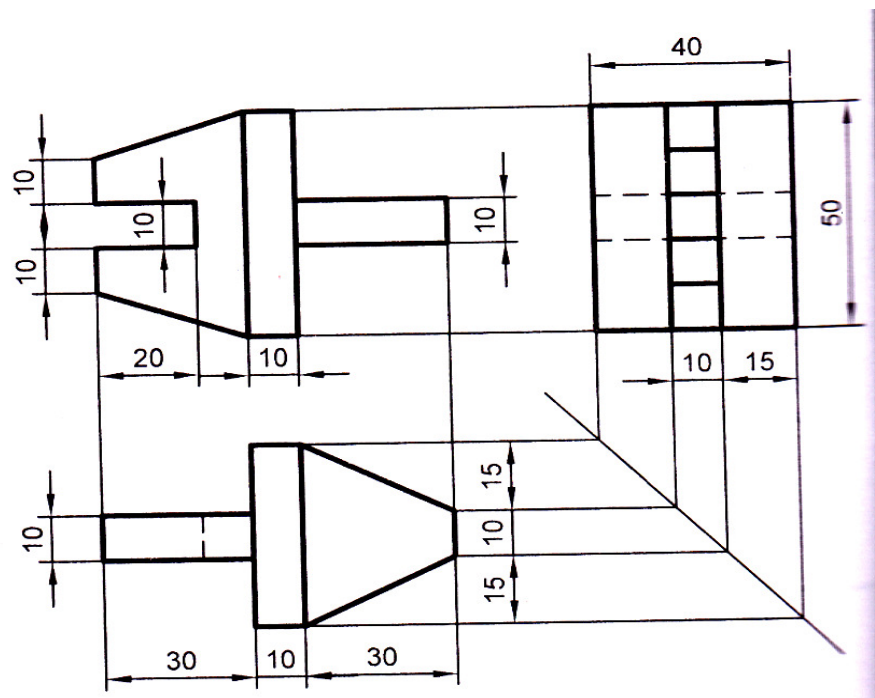**(Mechanical Engineering)**

Time: 3 hours   **Max. Marks: 70**

Question Paper Consists of **Part-A** and **Part-B**
Answering the question in **Part-A** is Compulsory,
Three Questions should be answered from **Part-B**
*****

PART-A

1.(a)   Draw the isometric view of the following orthographic views?

  (b)   A plate having shape of an isosceles triangle has base 50mm long and altitude 70mm. It
         is so placed that in the front view it is seen as an equilateral triangle of 50mm sides and
         one side inclined at 45^0 to xy. Draw its top view?

                                                                              [16+6]

PART-B

2.(a)   On a map, the distance between two points is 14 cm. The real distance between them is
         20 km. Draw a diagonal scale of this map to read kilometres and hectametres, and to
         measure up to 25km. Show a distance of 17.6 km on this scale?
  (b)   The major axis of an ellipse is 150mm long and the minor axis is 100mm long. Find the
         foci and draw the ellipse by Arcs of circles method. Draw a tangent to the ellipse at a
         point on it 25mm above the major axis?

                                                                              [8+8]

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3.(a) The front view of a line, inclined at 30^0 to the VP is 65mm long. Draw the projections of the line, when it is parallel to and 40mm above the HP, its one end being 30mm in front of the VP?

(b) A stick is struck in the ground making an angle of 30^0 to the ground. Draw the projections of the free end of the stick if the end of the stick above the ground is 1.5m and the distance of the end from a wall is 2.5m.?

[8+8]

4. The end P of a line PQ 130mm long is 55mm in front of the VP. The HT of the line is 40mm in front of the VP and the VT is 50mm above the HP. The distance between HT and VT is 110mm. Draw the projections of the line PQ and determine its angles with the HP and the VP.

[16]

5. A triangular plane ABC has a 60mm long base AB and is on the ground inclined to the VP at 30^0. Its altitude length is 80mm. the plane is lifted on AB such that AC lies on a plane perpendicular to both the HP and the VP. Draw the projections of the plane. Find out the angles of inclination of the plane with the HP and the VP?

[16]

6. Draw the projection of a cylinder 75mm diameter and 100mm long, lying on one of its generator on the ground with its axis inclined at 30^0 to the VP and parallel to the ground.

[16]

7. Draw (i) Front view (ii) Top view and (iii) Side view of the pictorial projection shown below?

[16]

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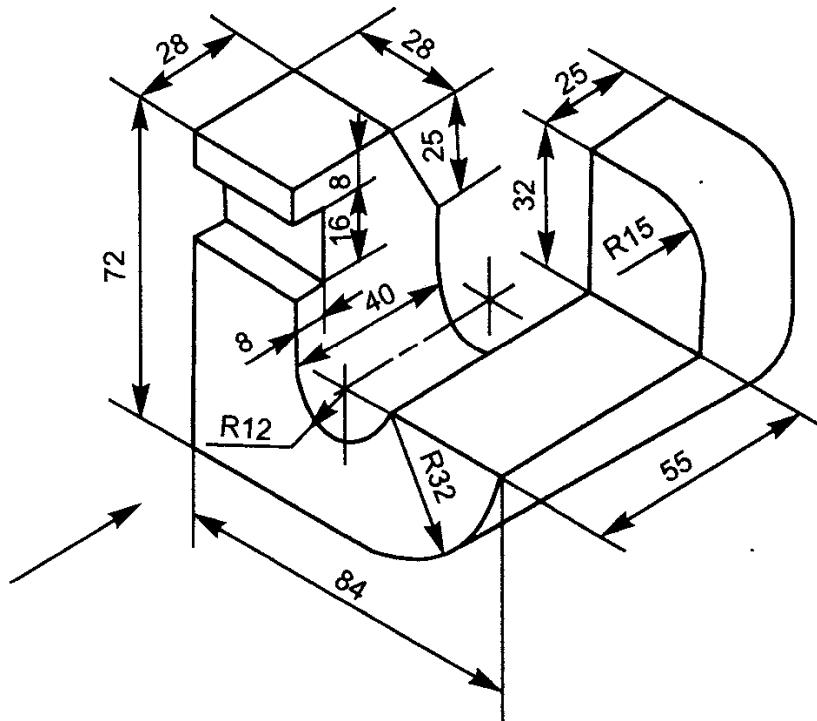**(Mechanical Engineering)**

Time: 3 hours   **Max. Marks: 70**

Question Paper Consists of **Part-A** and **Part-B**
Answering the question in **Part-A** is Compulsory,
Three Questions should be answered from **Part-B**
*****

PART-A

1.(a) Draw (i) Front view (ii) Top view and (iii) Side view of the pictorial projection shown below?

(b) A thin 30^0-60^0 set square has its longest edge in the VP and inclined at 30^0 to the HP. Its surface makes 45^0 with the VP. Draw its projections?
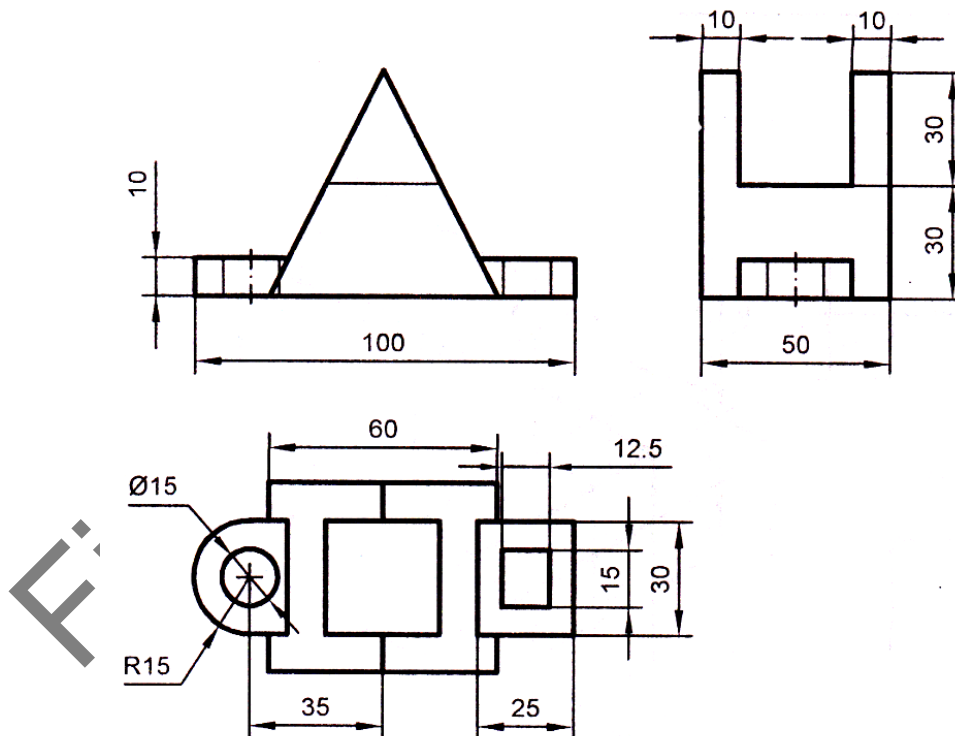
[16+6]

PART-B

2.(a) Construct a vernier scale of RF=2 to show cm,$1/10^{th}$ of cm and $1/100^{th}$ of cm to read up to 9cm.Mark on the scale the lengths 7.02cm.?

(b) Inscribe a regular octagon in a circle of diameter 80mm.?

[10+6]

||"|"||"||"""|

3.(a) A line GH 45mm long is in the HP and inclined to the VP. The end G is 15mm in front of the VP. Length of front view is 35mm. Draw the projections of the line. Determine its inclination with the VP?

(b) The electric pole is 10m height. A mighty storm bent it in such a way that its tip is now at a distance of half of its original distance from the ground. Draw the projections of the pole tip if it is 3m from a wall of a building?

[8+8]

4. The midpoint M of a straight line AB is 60mm above the HP and 50mm in front of the VP. The line measures 80mm long and inclined at an angle of 30^0 to the HP and 45^0 to the VP. Draw its projections?

[16]

5. A rhombus having diagonals 150mm and 60mm is so placed that its smaller diagonal is parallel to both the reference planes and the larger diagonal is inclined at 40^0 to the HP. Draw its projections. Also, find the angles made by the plane with the HP and the VP?

[16]

6. A hexagonal pyramid, base 25mm side and axis 50mm long, has an edge of its base on the ground. Its axis is inclined at 30^0 to the ground and parallel to the VP. Draw its projections.

[16]

7. Draw the isometric view of the orthographic projections shown below?

[16]

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