Subject Code: R13209/R13 **Set No - 1**

I B. Tech II Semester Regular/Supplementary Examinations July/Aug. - 2015

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**
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PART-A

1.(a) Draw the isometric view as shown in Fig.1

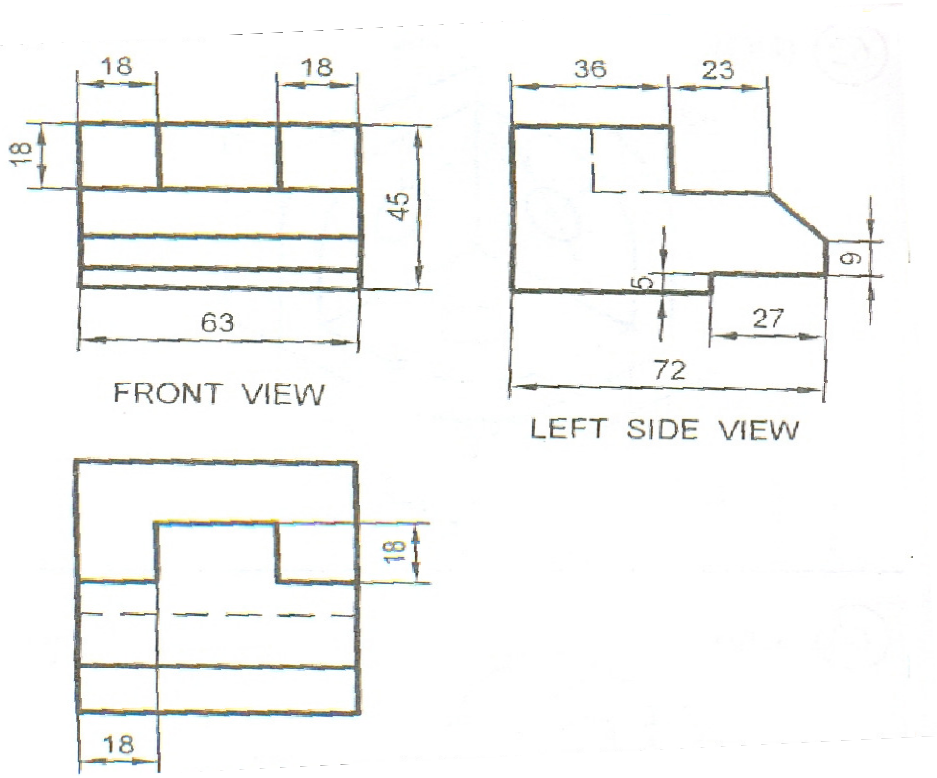


Fig.1 (Note: all dimensions are in mm)

(b) A regular pentagonal prism lies with its axis inclined at 60^0 to HP and parallel to VP. The prism is 70mm long and has a face width of 25mm. The highest rectangular face is perpendicular to VP. The prism leans to the left. Draw the top and front views.

[12+10]

PART-B

2.(a) A car is moving at a speed of 360 km/hour. Draw a diagonal scale to represent 6km by 1cm to show a maximum distance of 60km. Measure the distance travelled by the car at 6 minutes 10 seconds.

(b) Construct a regular hexagon of side 28mm when one side is horizontal.

[8+8]

3.(a) A line AB 60mm long is parallel to HP. The point A is 20mm above HP and 35mm in front of VP. The length of the front view is 50mm. Determine its true inclination with VP.

(b) A point A is situated in the first quadrant. Its shortest distance from the intersection point of HP; VP and auxiliary plane is 60mm and it is equidistant from the principle planes. Draw the projections of the point and determine its distance from the principle planes.

[8+8]

4. A line AB has its end A in HP and 40mm in front of VP. Its front view is inclined at 50^0 to XY and has a length of 70mm. The other end B is in VP. Draw its projections. Also, find the true length and true inclinations of the line.

[16]

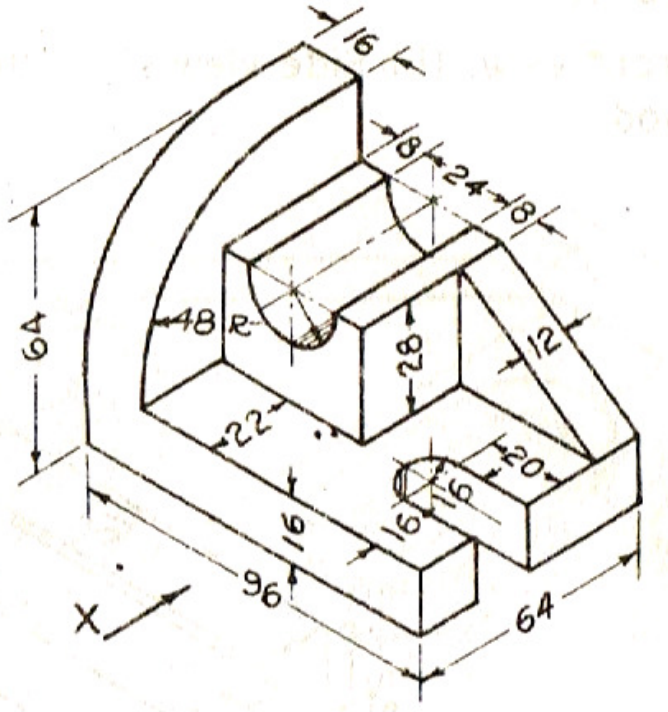
5. Draw the projections of a circle of 50mm diameter resting in the HP on a point A on the circumference, its plane inclined at 45^0 to the HP and the top view of the diameter making 30^0 angle with the VP.

[16]

6. A hexagonal pyramid, side of base 25mm and axis 50mm long, rests with one of the edges of its base on HP and its axis is inclined at 30^0 to HP and parallel to VP. Draw its projections.

[16]

7. Draw (i) Front View (ii) Top View (iii) Side View as shown in Fig.2



[16]

Fig.2 (Note: all dimensions are in mm)

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Subject Code: R13209/R13 **Set No - 2**

I B. Tech II Semester Regular/Supplementary Examinations July/Aug. - 2015

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**

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PART-A

1.(a) Draw (i) Front View (ii) Top View (iii) Side View as shown in Fig.1

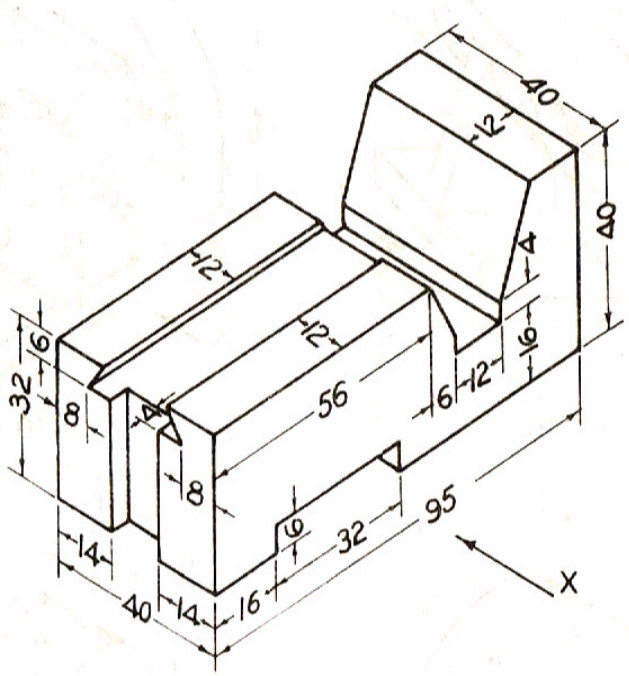


Fig.1 (Note: all dimensions are in mm)

(b) A pentagonal pyramid with side of base 30mm and axis 60mm long rests with an edge of its base on HP such that its axis is parallel to both HP and V.P. Draw the projection of the solid.

[12+10]

PART-B

2. Construct an ellipse when the major axis is 120mm and the distance between the foci is 108mm. Determine the length of the minor axis.

[16]

3.(a) Two points A and B are in the HP. The point A is 30mm in front of the VP while B is behind the VP. The distance between their projectors is75mm and the line joining their top views makes an angle of 45^0 with xy. Find the distance of the point B from the VP.

(b) A line CD 30mm long is parallel to both the planes. The line is 40mm above HP and 25mm in front of VP. Draw its projections.

[8+8]

|''|''|||''|'''|||'|

4. A line AB, 65mm long, has its end A 20mm above HP and 25mm in front of VP. End B is 40mm above HP and 65mm in front of VP. Draw the projections of AB. Find its inclinations with HP and VP.

[16]

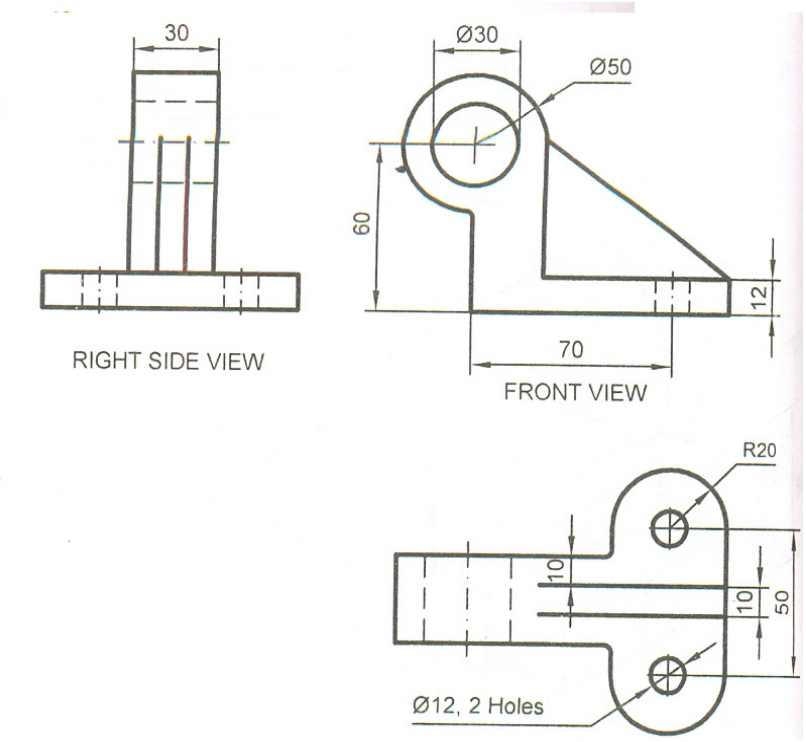
5. A 60^0 set square of 125mm longest side is so kept that the longest side is in the HP making an angle of 30^0 with the VP and the set square itself inclined at 45^0 to the HP. Draw the projections of the set-square.

[16]

6. Draw the projections of a cylinder 75mm diameter and 100mm long, lying on the ground with its axis inclined at 30^0 to the vertical plane.

[16]

7. Draw the isometric view as shown in Fig.2



[16]

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Fig.2 (Note: all dimensions are in mm)

Subject Code: R13209/R13 **Set No - 3**

I B. Tech II Semester Regular/Supplementary Examinations July/Aug. - 2015

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**

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PART-A

1.(a) Draw the isometric view as shown in Fig.1

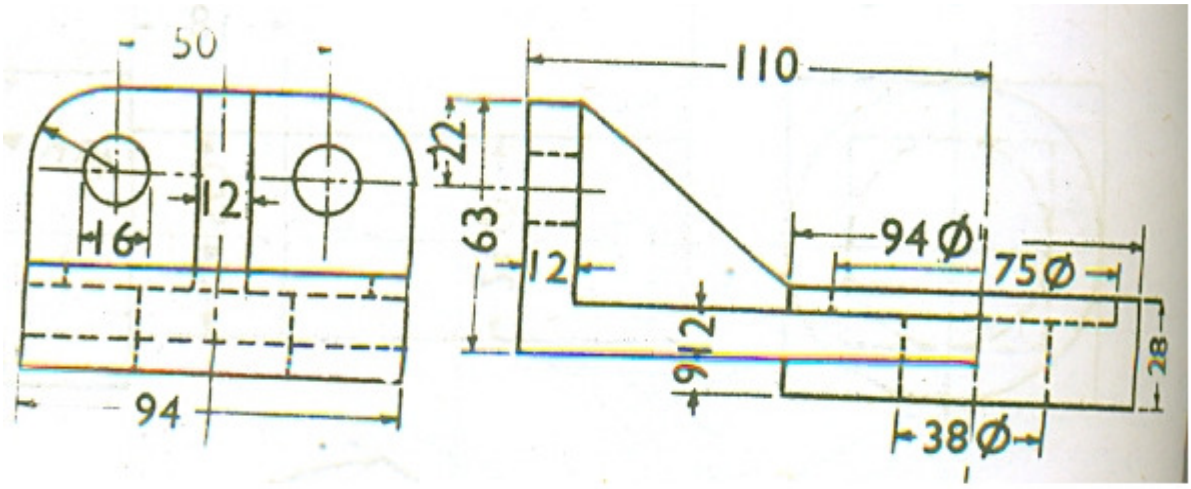


Fig.1 (Note: all dimensions are in mm)

(b) A composite plate of negligible thickness is made up of a rectangle 60mm × 40 mm and a semi-circle on its longer side. Draw its projections when the longer side is parallel to the HP and inclined at 45^0 to the VP; the surface of the plate making 30^0 angle with the HP. [12+10]

PART-B

2.(a) A distance of 30cm measure on a topography represents 450m. Construct a diagonal scale showing divisions of 50cm capable of measuring 300m. Mark on your scale the distance of 255.5m and 177.5m.

(b) A truck is moving at the rate of 1.2 km/min. Construct a diagonal scale with RF value of 1/25000, showing minutes and seconds. Mark the distance moved by the truck in 4minutes and 27 seconds. [8+8]

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

(b) A line AB 60mm long is parallel to HP. The point A is 20mm above HP and 35mm in front of VP. The length of the front view is 50mm. Determine the true inclination with VP. [8+8]

4. A line CD, inclined at 250^0 to HP, measures 80mm in top view. End C is in the first quadrant and 25mm and 15mm from HP and VP respectively. End D is at equal distances from both reference planes. Draw the projections; find true length and true inclination with VP. Locate the traces.

[16]

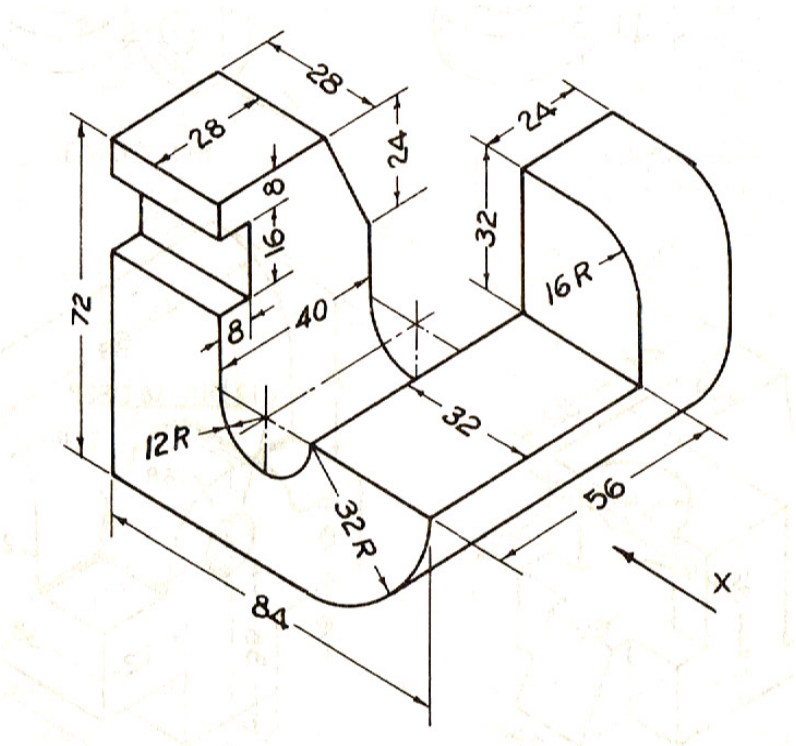
5. A thin square plate EFGH of 40mm side is having its corner G on HP. Diagonal GE is inclined at 40^0 to HP and diagonal FH inclined at 40^0 to VP and parallel to HP. Draw its projections.

[16]

6. A right regular triangular pyramid, base 35mm side and axis 60mm rests with one of its inclined lateral edges on HP such that the two triangular faces containing the inclined edge on which it rests make equal inclinations with HP. The projection of the axis on the HP is parallel to VP. Draw the projections.

[16]

7. Draw (i) Front View (ii) Top View (iii) Side View as shown in Fig.2



[16]

Fig.2 (Note: all dimensions are in mm)

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Subject Code: R13209/R13 **Set No - 4**

I B. Tech II Semester Regular/Supplementary Examinations July/Aug. - 2015

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**

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PART-A

1.(a) Draw (i) Front View (ii) Top View (iii) Side View as shown in Fig.1

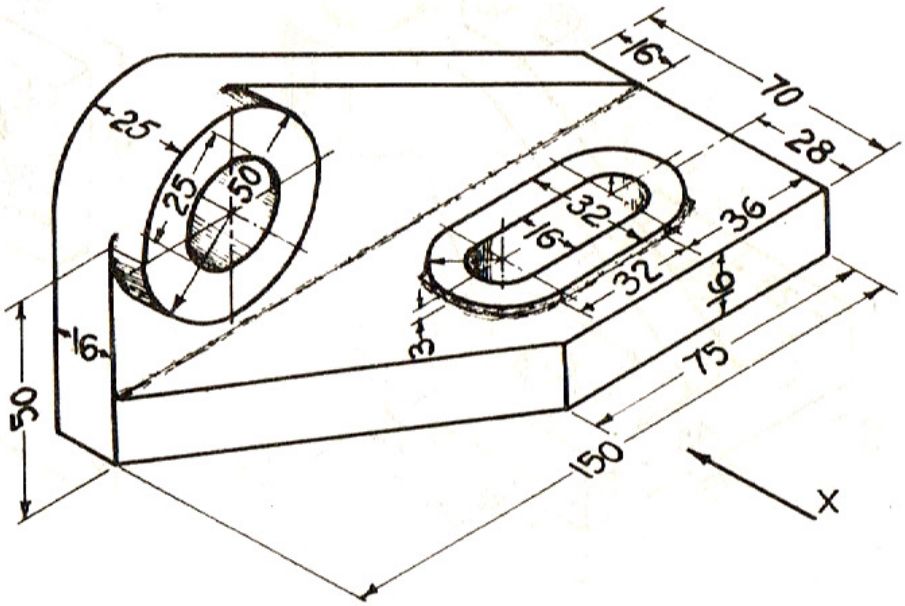


Fig.1 (Note: all dimensions are in mm)

(b) A mirror of size 560mm x 320mm is fixed on a wall on one of its shortest edges. The mirror is so fixed that it appears as a square in the front view. Draw the projections of the mirror. Find its inclinations with the wall and ground.

[12+10]

PART-B

2.(a) On the plan of a shopping complex, a line 10cm long represents a distance of 5m. Draw a diagonal scale for the plan to read up to 6m showing meters, decimeters and centimeters. Mark the lengths 3.24m and 5.57m.

(b) Inscribe an ellipse in a parallelogram having sides 150mm and 10mm long and an included angle of 120^0.

[8+8]

3.(a) A line EF 60mm long is in VP and inclined to HP. The top view measures 45mm. The end E is 15mm above HP. Draw the projections of the line. Find its inclination with HP.

(b) Two points A and B are in the HP. The point A is 30mm in front of the VP; while B is behind the VP. The distance between their projectors is 75mm and the line joining their top views makes an angle of 45^0 with xy. Find the distance of the point B from the VP.

[8+8]

4. A line AB 55mm long has its one end 15mm above HP and 10mm in front of VP. It is inclined at an angle of 55^0 to HP and 35^0 to VP. Draw its three principal views.

[16]

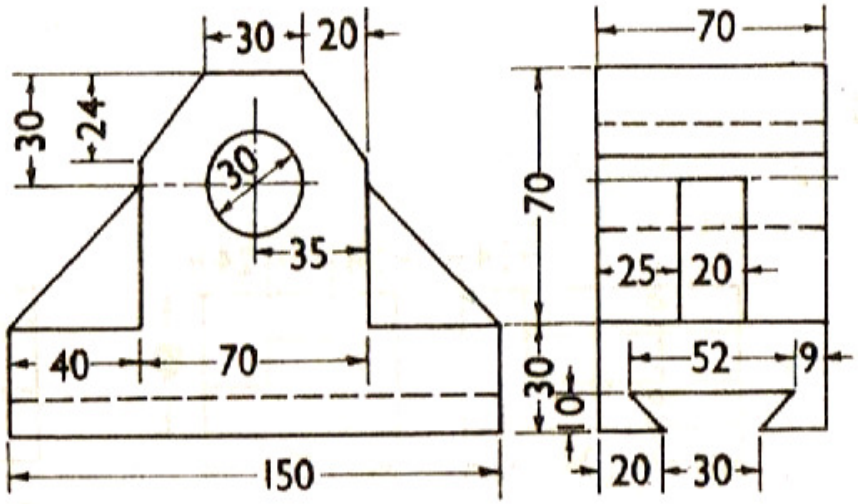
5. ABCD is a symmetrical trapezium with AB=40mm and CD=64mm as its parallel sides are 48mm height. The plane has its side AB in VP and CD 28mm away from it. The front view of BC makes an angle of 35^0 with HP. Obtain the projections of the plane. Find its angle with VP.

[16]

6. Draw the top and front view of a cone of base diameter 46mm and height 65mm lying with one of its generators on HP. The axis is parallel to VP.

[16]

7. Draw the isometric view as shown in Fig.2



[16]

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Fig.2 (Note: all dimensions are in mm)