

Subject Code:- R10205/R10

Set No - 1

I B.Tech II Semester Regular Examinations June - 2012

ENGINEERING DRAWING

(Common to Electrical & Electronic Engineering, Mining, Information Technology)

Time: 3 hours

Max. Marks : 75

**Answer any FIVE Questions
All Questions carry equal marks**

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1. Construct a vernier scale to read distance correct to decimeter on a map in which the actual distances are reduced in the ratio of 1:40000. The scale should be long enough to measure up to 6 km. Mark on the scale a length of 3.34 km and 0.59 km.
[15M]
- 2.(a) Draw the orthographic projections of the following points:
 - (i) Point P is 25 mm above HP and 35 mm behind VP
 - (ii) Point Q is in VP and 40 mm below HP
 - (iii) Point R is in HP and 30 mm behind VP
 - (iv) Point S is 32 mm below HP and 45 mm behind VP(b) Draw the projections of a line 70 mm long when it is perpendicular to HP and in VP . The end nearer to HP is 20 mm above it and 30 mm in front of VP.
[8M + 7M]
3. The projectors drawn from HT and VT of a straight line AB are 100 mm apart and the distance between the end projectors A and B are 60 mm apart. HT is located 50 mm below XY line and VT is 90 mm above XY line. The end A of the line lies in the HP. Find true length and inclinations with HP and VP.
[15M]
4. Draw the projections of rhombus having diagonals 125 mm and 50 mm long, the smaller diagonal of which is parallel to the both the principal planes, while the other is inclined at 60 degrees to the HP.
[15M]
5. A hexagonal prism having a 20 mm edge of its base and an axis of 50 mm long, is resting on one of its rectangular faces on HP with the axis perpendicular to the profile plane. Draw the projections of the prism.
[15M]
6. A Pentagonal pyramid, base 20 mm side and axis 50 mm long is resting on VP with one of its triangular faces in VP. Draw its projection.
[15M]

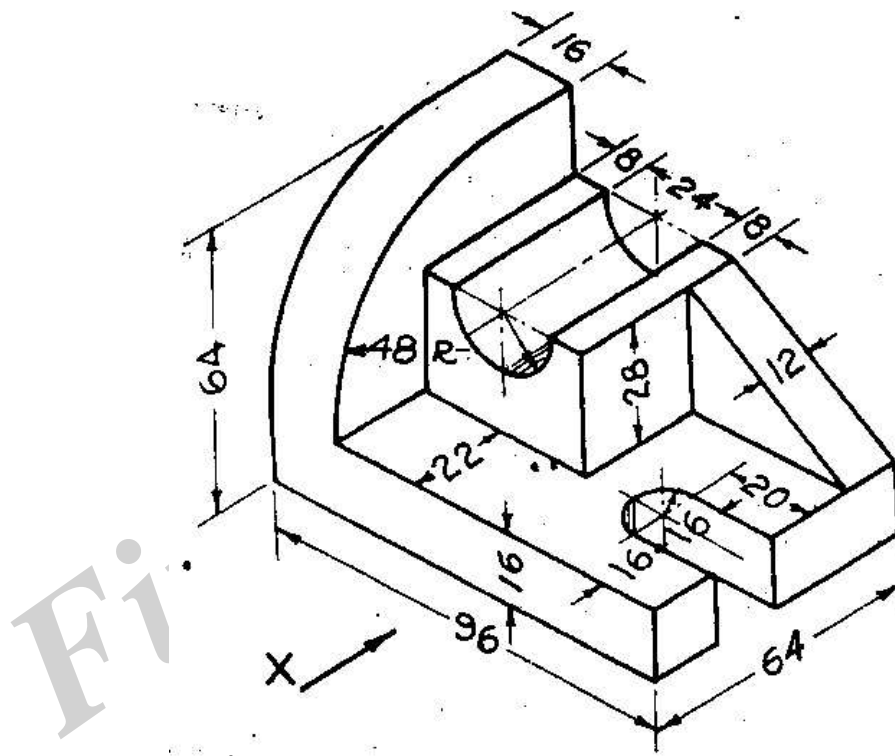
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7. A cylindrical slab of 75 mm diameter and 45 mm thick is surmounted by a cube of 38 mm side. On the top of the cube rests a square pyramid of altitude of 38 mm and side of base 25 mm. the axes of the solids are in the same straight line. Draw the isometric view of the setup.

[15M]

8. Draw the front view, top view and side view from the right of the figure shown in isometric view. All dimensions are in mm.



[15M]

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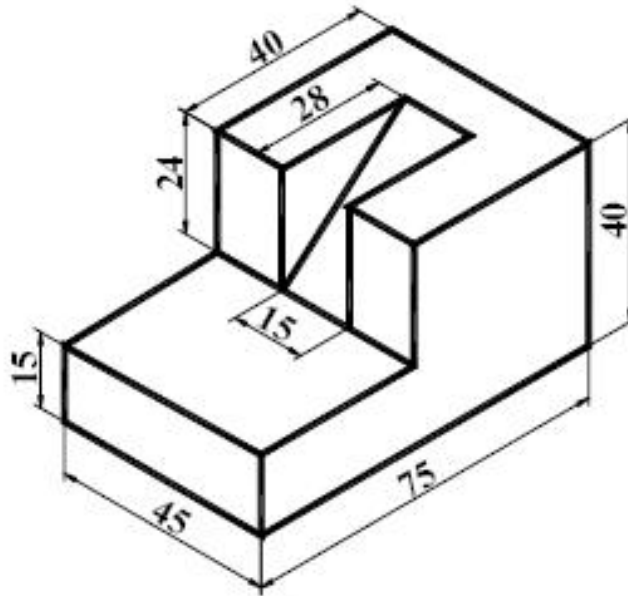
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1. A map 500 cm x 50 cm wide represents an area of 6250 Sq. kilometers. Construct a diagonal scale to measure kilometers, hectometers and decameters. Indicate on the scale a distance of 5.56 kilometers. Find R. F of the scale.
[15M]
- 2.(a) A line AB 45 mm long is in VP and parallel to the profile plane. The end A is 10 mm above HP. Draw all the three principal views.
(b) A point 20 mm above XY line is the front view of two points E and F. The top view of E is 35 mm behind VP, and the top view of F is 40 mm in front of VP. Draw the projections of the two points and state their positions with reference planes and quadrants in which they lie.
[8M + 7M]
3. A line AB has its end A in HP and 40 mm in front of VP. Its front view is inclined at 50 degrees to XY line and has a length of 70 mm. The other end B is in VP. Draw its projections. Also find true length and true inclinations of the line.
[15M]
4. The top view of a square lamina of side 60 mm is a rectangle of 60 mm x 20 mm, with the longer side of the rectangle being parallel to the XY line, in both front and top views. Draw its projections.
[15M]
5. A hexagonal prism having 25 mm edges at its base and an axis 50 mm long, has one of its side surfaces inclined at 45 degrees to the VP and one of its longer edges on the ground. Draw the projections of the prism.
[15M]
6. A hexagonal pyramid having 20 mm sides at its base and an axis 70 mm long, has one of the corners of its base in the VP and its axis inclined at 45 degrees to the VP and parallel to the HP.
[15M]

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7. A hemispherical piece of metal 90 mm in diameter is joined centrally to the end of a cylindrical piece of metal of diameter 60 mm and 90 mm long, so as to form a snap headed rivet. Draw the isometric projection of the rivet when it is held with the hemispherical head at the top.
- [15M]
8. Draw front view, top view and a side view for the solid whose isometric given below.



[15M]

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Set No - 3

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Time: 3 hours

Max. Marks : 75

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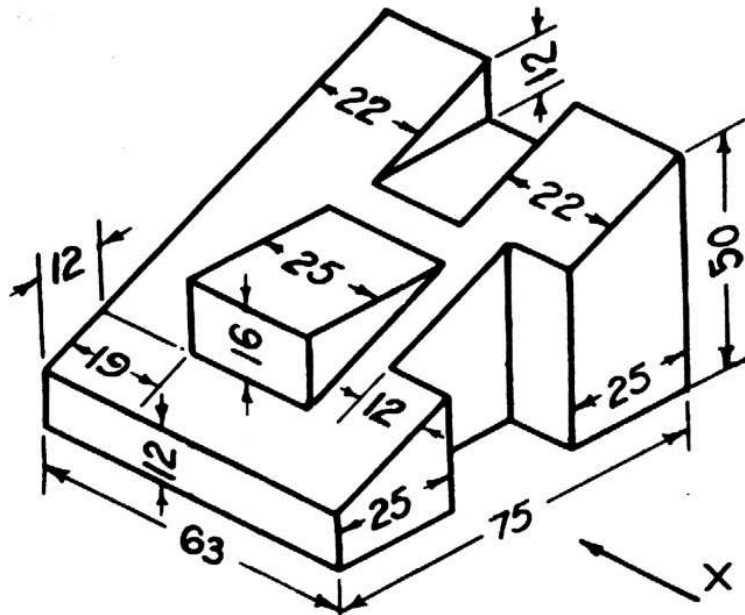
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1. The major and minor axes of an ellipse are 100 mm long and 60 mm long respectively. Locate the foci and draw the ellipse by arcs of circles method. Draw a tangent and normal to the ellipse at a point on it 25 mm above the major axis.
[15M]
- 2.(a) Draw the projections of the following points on the same ground line, keeping the distance between projectors equal to 25 mm.
 - (i) Point A, 20 mm below the HP, 30 mm in front of VP
 - (ii) Point B, in the VP, 30 mm above HP
 - (iii) Point C, 20 mm below the HP, 20 mm behind the VP
 - (iv) Point D, in the HP, 25 mm behind VP(b) A line AB 45 mm long is in HP and parallel to the profile plane. The end A is 10 mm in front of VP. Draw all the three principal views.
[8M + 7M]
3. The mid point *M* of a straight line AB is 60 mm above HP and 50 mm in front of VP. The line measures 80 mm long and inclined at an angle of 30 degrees with HP and 45 degrees with VP. Draw its projections.
[15M]
4. A thin circular plate of 50 mm diameter is resting on point A of its rim with the surface of the plate inclined at 45 degrees to the HP and the diameter through A inclined at 30 degrees to the VP. Draw the projections of the plate.
[15M]
5. A pentagonal prism having a 20 mm edge of its base and an axis of 50 mm long, is resting on one of its rectangular faces on VP with the axis perpendicular to the profile plane. Draw the projections of the prism.
[15M]
6. A hexagonal pyramid, base 20 mm side and axis 50 mm long is resting on VP with one of its triangular faces in VP. Draw its projection.
[15M]

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Set No - 3

7. A frustum of cone having 25 mm as top diameter, 50 mm as bottom diameter and 50 mm axis length is placed vertically on cylindrical block of 75 mm diameter and is 25 mm thick such that both the solids have the common axis. Draw the isometric view of the combination of these solids.
- [15M]
8. Draw front view, top view and a side view for the solid whose isometric given below. All dimensions are in mm.



[15M]

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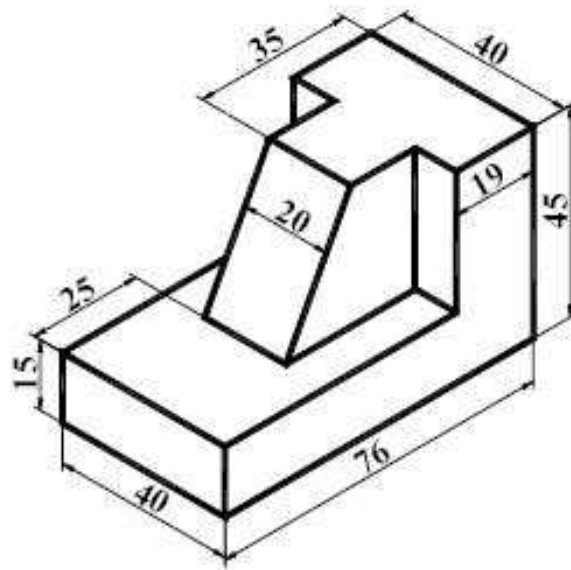
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1. On a map, 120 cm x 100 cm represents an area of 3000 sq. meters. Draw a diagonal scale showing meters, decimeters, and centimeters and to measure up to 4 meters. Show a length of 2.73 meters on it.
[15M]
- 2.(a) Draw the projections of a point lying 25mm above HP and in first quadrant if its shortest distance from the line of intersection of planes is 40 mm. Also find the distance of the point from VP.
(b) A straight line AB, 65mm long makes an angle 30 degrees to VP and parallel to profile plane. The end A is touches both the planes. Draw the projections of the line.
[8M + 7M]
3. The top view of a line is 75 mm long and inclined to XY at 45 degrees. One end is 20 mm above HP and 10 mm in front of VP. The other end is 65 mm above HP and is in front of VP. What is the true length of the line and its inclination with HP and VP? Also show its traces.
[15M]
4. A regular pentagonal lamina of 30 mm side is touching HP with one of its sides while the opposite corner to this side of the lamina touches VP, If the lamina makes an angle of 60 degrees with HP and 30 degrees with VP, draw the projections of the lamina.
[15M]
5. A hexagonal prism of base 20 mm side and axis 50 mm long is placed with one of its base edges on VP such that the axis is inclined at 30^0 to VP. Draw its projections.
[15M]
6. A Pentagonal pyramid, base 20 mm side and axis 45 mm long is lies in VP and one of its triangular faces perpendicular to VP. Draw its projection.
[15M]

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Set No - 4

7. A cube of 50 mm side has square holes of 30 mm side cut through from all the six faces. The sides of square holes are parallel to the edges of the cube. Draw the isometric view of the cube. [15M]
8. Draw front view, top view and a side view for the solid whose isometric given below. All dimensions are in mm. [15M]



[15M]