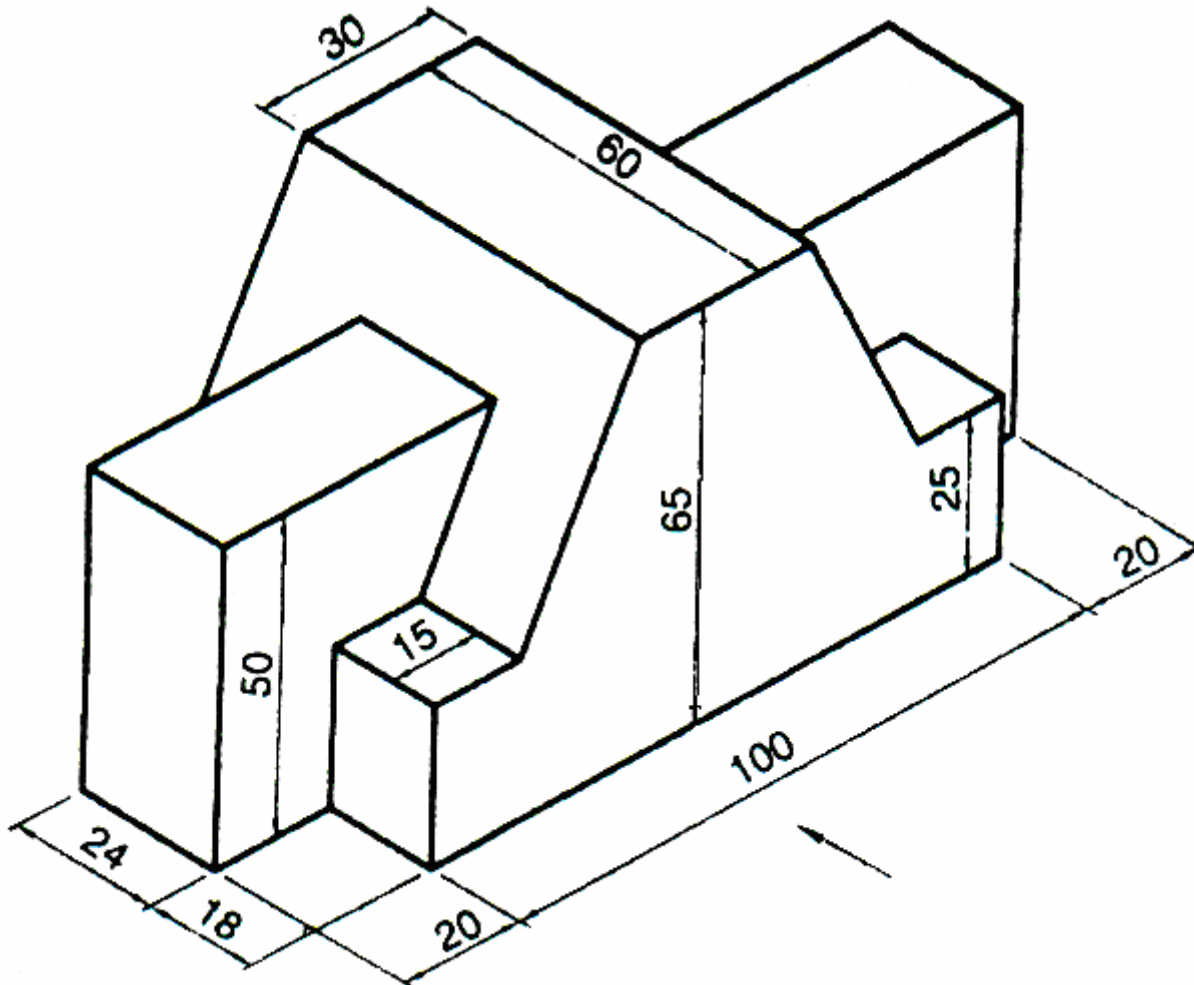| Code No: 09A11291	R09	SET-1

B. Tech I Year Examinations, December/January -2011-12
ENGINEERING DRAWING
(Common to Information Technology, Bio Technology and Automobile Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
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1. a) An area of 49 sq cm on a map represents an area of 16 m^2 on a field. Draw a scale long enough to measure 8 m. Mark a distance of 6 m 9 dm on the scale. Find RF and length of the scale.

   b) Construct an ellipse of major diameter 120 mm and minor diameter 80 mm using concentric circle method for half of the curve and oblong method for the other half of the curve. [15]

2. A 90 mm straight long line PQ, has the end P 20 mm above the H.P. and 35 mm in front of the V.P. The other end Q is 80 mm above the H.P. and 60 mm in front of the V.P. Draw its projections and determine its true inclination with the principal planes. [15]

3. An equilateral triangle with a 60 mm long edge rests on a corner in the V.P. such that the edge opposite to that corner is perpendicular to the H.P. The surface of the plane is inclined at 45^0 to the V.P. Draw its projections. [15]

4. A pentagonal prism, having a base with a 30mm side and 60mm height is resting on the base in HP such that one of the rectangular faces is parallel to the VP. It is cut by a plane perpendicular to VP and 45 degrees inclined to HP and cutting the axis of the solid 10mm from the top. Draw development of lateral surface of the bottom part of the solid. [15]

5. A vertical cylinder 70mm diameter is penetrated by a square prism of side 30mm and its axis is parallel to VP and 30 degrees inclined to HP. Rectangular faces of the prism are equally inclined to the VP. Axis of vertical cylinder is intersecting with the axis of the horizontal square prism. Draw the projections showing curves of intersection. [15]

6. A frustum of a square pyramid of base side 40 mm and top base side 20 mm and height 50 mm is centrally placed on top of a circular slab of diameter 60 mm and thickness 40 mm. Draw the isometric projection of the solids. [15]

7. Draw the following views for the object shown in figure. All dimensions are in mm.
   a) Front view
   b) Top view
   c) Left Side view. [15]

8. A rectangular pyramid, with the base measuring 40 mm × 25 mm and the axis 50 mm, rests with its base on the ground plane such that the longer base edge is parallel to the picture plane and 20 mm behind it. The station point is 65 mm in front of the picture plane, 35 mm to the left of the axis of the pyramid, and 65 mm above the ground plane. Draw the perspective projection of the pyramid. [15]

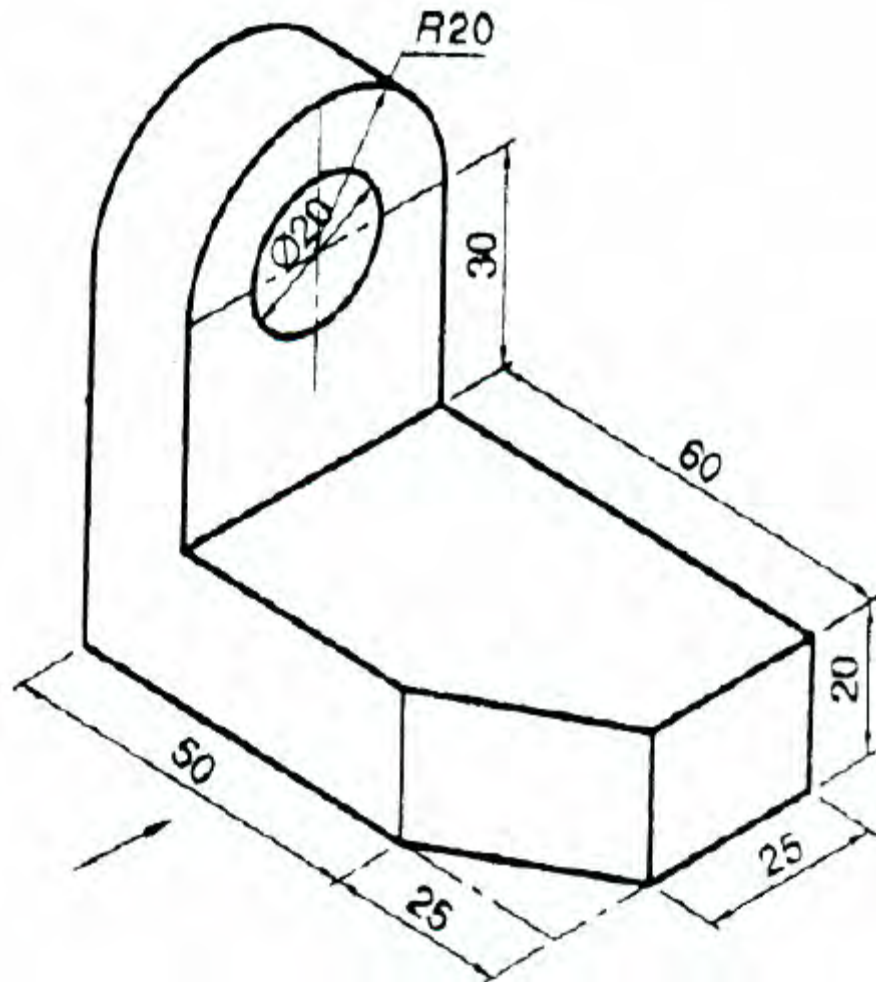*********

Code No: 09A11291   **R09**   **SET-2**

B. Tech I Year Examinations, December/January -2011-12
ENGINEERING DRAWING
(Common to Information Technology, Bio Technology and Automobile Engineering)

Time: 3 hours   **Max. Marks: 75**
Answer any five questions
All questions carry equal marks
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1. a)   A cube of 5 cm sides represents a tank of 1000 m^3 volume. Find the R. F. and construct a scale to measure up to 35 m and mark a distance of 27 m on it.

   b)   The major axis of an ellipse is 120mm long and the foci are at a distance of 20mm from its ends. Draw the ellipse using one-half of it by concentric circles method and the other half by rectangle method.   [15]

2.   A line PQ has its end projectors 50 mm apart. The end P is 20 mm above the H. P. and 15 mm in front of the V.P., while the end Q is 60 mm above the H. P. and 70 mm in front of the V. P. Draw the projections of the line and determine its true length and inclinations with the principal planes. Also locate its traces.   [15]

3.   A pentagonal plane with a 25 mm side rests on the H.P., on one of its corners with its surface perpendicular to the V.P. and inclined at 30^0 to the H.P. Draw its projections when the side opposite to the corner on which it is resting is parallel to the H.P.   [15]

4.   A hexagonal pyramid, having a base with a 20mm side and 50mm height is resting on the base in HP such that one of the base sides is parallel to the VP. It is cut by a plane perpendicular to VP and 60 degrees inclined to HP and bisecting the axis of the solid. Draw development of lateral surface of the bottom part of the solid.   [15]

5.   A vertical square prism, with 50 mm sides at its base and 100 mm long axis, has two of its rectangular faces inclined at 30 degrees to the VP. A hole of 50 mm diameter is drilled in the prism. The axis of the hole is parallel to both the HP and the VP bisects the axis of the prism. Draw the projections showing the curves of intersection.   [15]

6.   A cone of base diameter 40 mm and height 50 mm rests centrally over a frustum of a pentagonal pyramid of base side 45 mm and top base side 35 mm and height 55 mm. Draw the isometric projections of the solids.   [15]

7.   Draw the following views for the object shown in figure. All dimensions are in mm.
   a)   Front view
   b)   Top view
   c)   Left Side view.   [15]

8.   Draw the perspective view of the frustum of a square pyramid with the edges at the base 40mm, edges at the top 30 mm and height 50 mm. The frustum is resting on its base with its base edges equally inclined to the picture plane and one of the base corners touching it. The station point is 80 mm in front of the picture plane, 15 mm to the left of the axis of the frustum, and 60 mm above the ground plane.   [15]

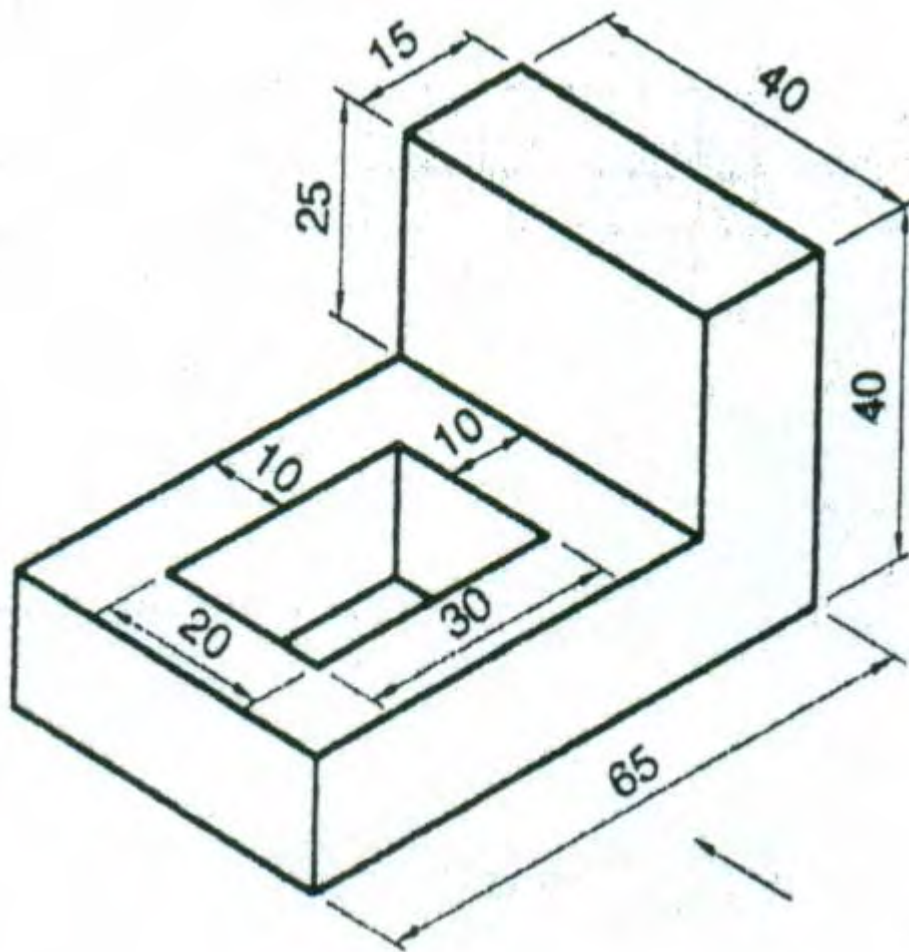*****

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R09

SET-3

B. Tech I Year Examinations, December/January -2011-12
ENGINEERING DRAWING
(Common to Information Technology, Bio Technology and Automobile Engineering)

Time: 3 hours   **Max. Marks: 75**

Answer any five questions
All questions carry equal marks

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1. a) Construct a diagonal scale of 1:25 to read metres, decimeters and centimeters and long enough to measure 4 m. Mark on it a distance of 2.47 m.
   b) The focus of a hyperbola is 35 mm from its directrix. Draw the curve when eccentricity is 4/3. Draw a tangent and a normal to the curve at a   point 30mm from the focus.   [15]

2. A 75 mm long line PQ is inclined at an angle of 30^0 to the H.P. The end P is 20 mm above the H. P. and on the V.P. The end Q is 60 mm in front of the V.P. Draw the projections of the line and locates its traces.   [15]

3. A rhombus with 60 mm and 40 mm long diagonals has a corner in the V.P. The surface of the plane is perpendicular to the H.P., and the front view appears as a square. Draw its projections and determine the inclination of the rhombus with the V.P.   [15]

4. A square pyramid, having a base with a 30mm side and 60mm height is resting on the base in HP such that one of the base sides is parallel to the VP. It is cut by a plane perpendicular to VP and 45 degrees inclined to HP and cutting the axis of the solid 20mm from top. Draw development of lateral surface of the bottom part of the solid.

                                                                                      [15]

5. A vertical cylinder, 80 mm in diameter and 100 mm in length, is completely penetrated by a horizontal square prism with 40 mm sides and 100 mm length. The axis of the prism is parallel to the VP, 8 mm in front of the axis of the cylinder, and 50 mm above the base of the cylinder. Draw the projections showing curves of intersection if the side faces of the prism are equally inclined to the HP.   [15]

6. Draw the isometric projection of a hexagonal prism of side of base 30 mm and altitude 50 mm surmounting a square pyramid of side 30 mm and height 45 mm such that the axes of the two solids are collinear and at least one of the edges of the two solids are parallel.   [15]

7. Draw the following views for the object shown in figure. All dimensions are in mm.
    a) Front view
    b) Top view
    c) Left Side view.   [15]

8. A pentagonal prism, with 30 mm edges at its base and the axis 60 mm long, rests on one of its rectangular faces on the GP, with its axis inclined at 30 degrees to the picture plane and one of the corners of the nearer base touching the PPP. The station point is 75 mm in front of the PPP and 50 mm above the GP. If the central plane is passing through the midpoint of the axis, draw the perspective view of the prism.   [15]

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Code No: 09A11291   **R09**   **SET-4**

B. Tech I Year Examinations, December/January -2011-12
ENGINEERING DRAWING
(Common to Information Technology, Bio Technology and Automobile Engineering)

Time: 3 hours   **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
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1. a)   Construct a diagonal scale showing kilometer, hectometer and decameter in which a 2 cm long line represents 1 km and the scale is long enough to measure up to 7 km. Find R.F. and mark 4 km 5 hm 3 dm on it.
   b)   Draw the hyperbola when the focus and the vertex are 25 mm apart. Consider eccentricity as 3/2. Draw a tangent and normal to the curve at a point that is 35 mm from the focus.
                                                                          [15]

2.   A 75 mm long line PQ is inclined at 45^0 to the H.P. The end P is 15 mm above the H.P. and 25 mm in front of the V.P. A vertical plane containing line PQ makes 45^0 with the V.P. Draw the projections of the line and determine its inclination with V.P. Also, locate its traces.   [15]

3.   A hexagonal plane with a 30 mm side rests on one of its side on the H.P., such that its surface is perpendicular to the V.P. and inclined at 45^0 to the H.P. Draw its projections when the plane lies in the first quadrant.   [15]

4.   A square pyramid, having a base with a 40 mm side and a 60 mm long axis, is resting on its base on the ground with all the edges of the base equally inclined to the V.P. It is cut by an A.I.P. such that true shape of the section is an equilateral triangle of largest side. Draw the sectional top view and true shape of the section.   [15]

5.   A vertical square prism with 40 mm edges at its base and 80 mm height is standing on its base with an edge of its base inclined at 30° to the VP. It is penetrated by a horizontal cylinder, 40 mm in diameter, such that the axis of the cylinder is parallel to the VP, 10 mm in front of the axis of the prism, and 40 mm above the base of prism. Draw the projections showing the curves of intersection.   [15]

6.   The frustum of a cone with a 60 mm base diameter, 40 mm top diameter and 50 mm height is surmounted centrally over a cylindrical block with 80 mm diameter and 30 mm thickness. Draw its isometric projection.   [15]

7.   Draw the following views for the object shown in figure.   All dimensions are in mm.
   a)   Front view
   b)   Top view
   c)   Left Side view.   [15]
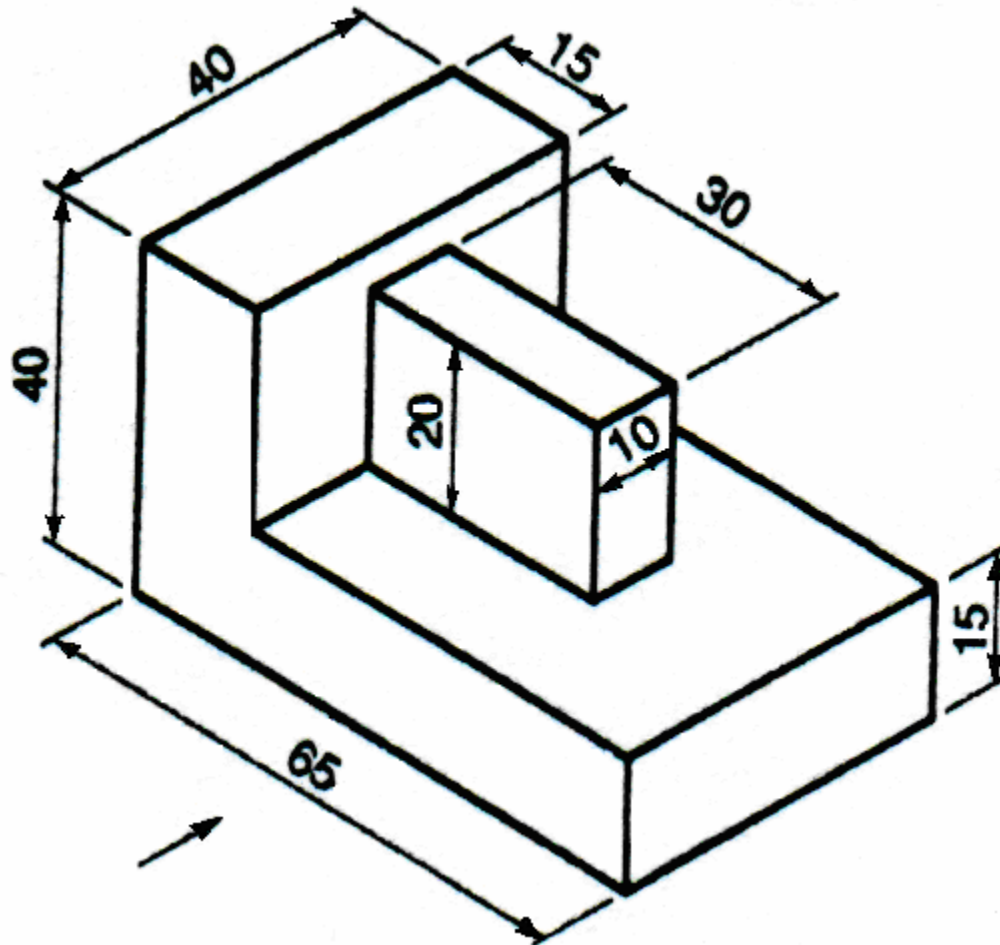
8.   A cylinder measuring 50 mm in diameter and 100 mm in height stands on its base on the GP. The axis of the cylinder is 30 mm behind the picture plane and 10 mm on the right of the observer. The observer is 120 mm in front of the PPP and 130 mm above the ground plane. Draw the perspective projection of the cylinder.   [15]

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