

**I B. Tech I Semester Regular/Supplementary Examinations, Oct/Nov - 2018**  
**ENGINEERING DRAWING**  
 (Common to CSE, IT, Agri E)

Time: 3 hours

Max. Marks: 70

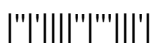
- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)  
 2. Answering the question in **Part-A** is Compulsory  
 3. Answer any **FOUR** Questions from **Part-B**

**PART -A**

1. a) The front view of a 75 mm long line which parallel to and 40 mm above the HP (6M)  
and one end being 20 mm in front of VP is 50 mm. draw its projections.
- b) A square pyramid of 40 mm side and height 50mm rests centrally on a square (8M)  
block of 60 mm edges and 20 mm thick. Draw the isometric projections of the  
composite solid with the edges of the two blocks equally inclined to each other.

**PART -B**

2. a) The actual length of 500 m is represented by a line of 15 cm on a drawing. (7M)  
Construct a Vernier scale to read up to 600 m. Mark on the scale a length of 549m.
- b) Construct an ellipse of major axis 100mm and minor axis 60mm using Arcs of (7M)  
circles method. Draw a tangent and normal at a point 20mm from any focus.
3. a) Draw the projections of straight line AB 60mm long parallel to H.P and inclined at (7M)  
an angle of  $40^{\circ}$  to V.P. The end A is 30mm above HP and 20mm in front of VP.
- b) A point A is 30 mm above the HP and in the first quadrant. Its shortest distance (7M)  
from the intersection of both the reference planes is 50 mm. Draw the projections  
of the point and determine its distance from the VP.
4. A rope that forms a straight line AB has its one end A tied to a hook on the ground (14M)  
and 25 mm in front of a wall. The other end B is tied to a pole which is 65 mm in  
front of vertical wall and the rope is inclined at  $30^{\circ}$  to both the vertical wall and  
the ground. Draw the projections of the line joining the rope and find the length of  
the rope.
5. Draw a regular hexagon of 40 mm side, with its two sides vertical. Draw a circle (14M)  
of 40 mm diameter in its centre. The figure represents a hexagonal plate with a  
hole in it and having its surface parallel to the VP. Draw its projections when the  
surface is vertical and inclined at  $30^{\circ}$  to the V.P. Assume the thickness of the plate  
to be equal to that of a line.
6. A pentagonal pyramid, base 25 mm side and axis 50 mm long has one of its (14M)  
triangular faces in the V.P. and the edge of the base contained by that face makes  
an angle of  $30^{\circ}$  with the H.P. Draw its projections.



7. Convert the isometric projection of the given figure 1 into orthographic (14M) projections by drawing the front view, top view and side view. (All dimensions are in mm)

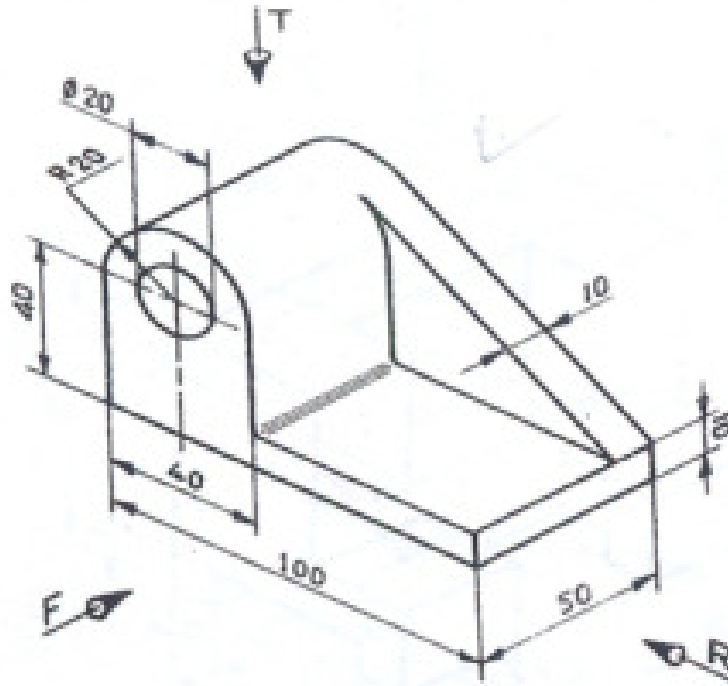


Figure.1



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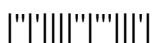
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**PART -A**

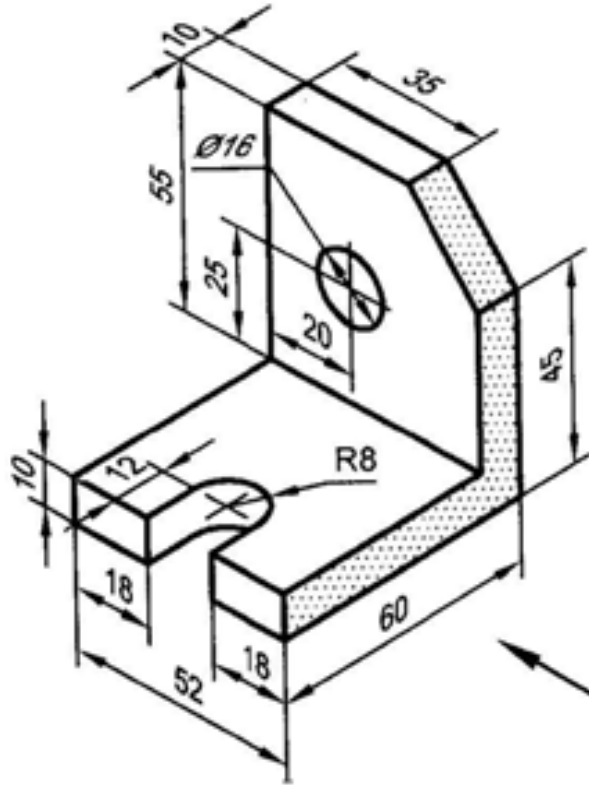
1. a) To construct a regular pentagon, given length of its side is 30 mm by using the general method. (6M)
- b) Draw the projections of a regular hexagonal surface of 25mm side, having one of its sides in the HP and inclined at  $60^\circ$  to the VP and its surface making an angle of  $45^\circ$  with the HP. (8M)

**PART -B**

2. a) The area of a field is 50,000 sq. meter. The length and breadth of field on the maps is 10 cm and 8cm respectively. Construct a diagonal scale which can be read up to one meter. Mark the length of 235m on the scale. What is the R.F of the scale? (7M)
- b) The major and minor axes of an ellipse are 140 mm and 90 mm respectively. Find the foci and draw the ellipse using arcs of circles method. Draw a tangent and normal to the ellipse at a point 40 mm above the major axes. (7M)
3. a) A line CD 30 mm long is perpendicular to V.P. and parallel to HP. Its end C is 5 mm in front of VP. and the line is 10mm above HP. Draw the projections of the line. (7M)
- b) A point at 25mm above the reference line XY is the front view of two points A and B. The top view of A is 40mm behind VP and the top views of B is 50mm in front of VP. Draw the projections of the points and state their positions relative to the planes of projections and the quadrants in which they lie. (7M)
4. The distance between the projectors of a straight line AB is 60 mm. one end A is 10 mm above HP and 20 mm in front of VP. While the other end B is 40 mm below the HP and 50 mm behind the VP. Draw its projections and mark its traces. Also find its true length and true inclinations with both the reference planes. (14M)
5. The top view of a plate, the surface of which is perpendicular to the VP and inclined at  $60^\circ$  to the HP. is a circle of 60 mm diameter. Draw its projections. (14M)
6. Draw the projections of a cone, base 30 mm diameter and axis 50 mm long, resting on HP on a point of its base circle with the axis making an angle of  $45^\circ$  with HP and parallel to VP. (14M)



7. Draw the front view, top view and left hand side view of the block shown in figure (14M) shown below.



Figure



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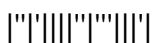
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**PART -A**

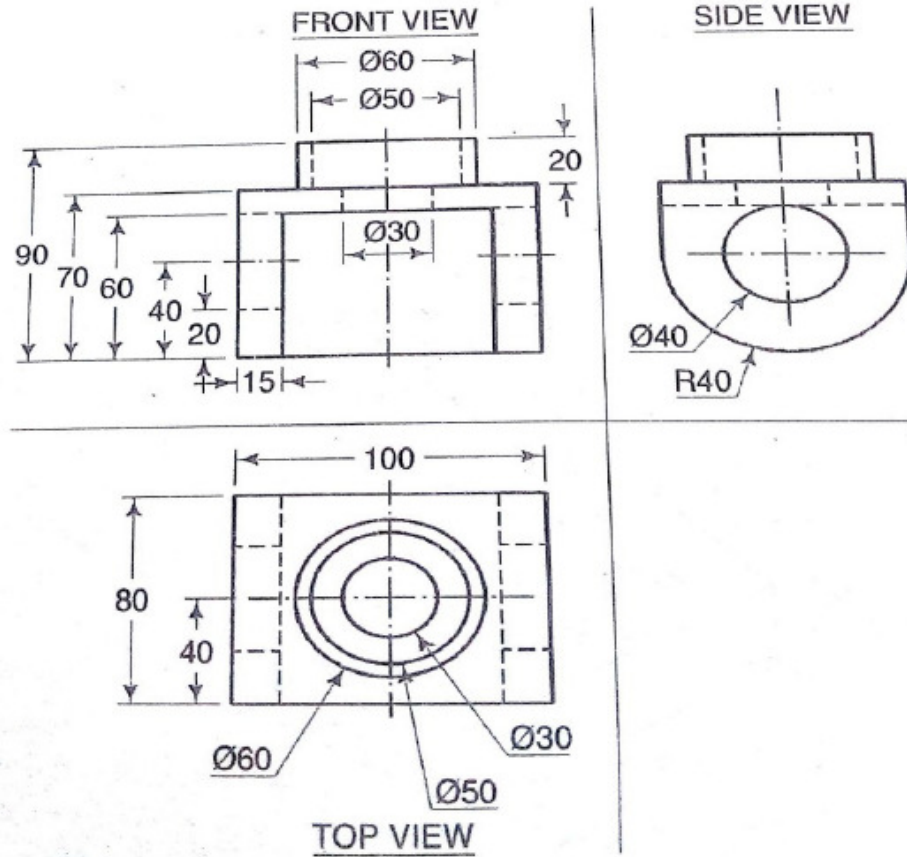
1. a) Construct a regular hexagon by using circle method, with one of its sides (i) Vertical (ii) Horizontal. The radius of circle of 20 mm. (6M)
- b) Draw the isometric projection of a hexagonal prism of side of base 25 mm and height 55 mm, on the top of which is placed a cone centrally of base diameter 50 mm and height 30mm. (8M)

**PART -B**

2. a) The foci of an ellipse are 80 mm apart and the minor axis is 60 mm long. Determine the length of the major axis and draw half the ellipse by arc of circles method and the other half by oblong method. Draw a tangent and normal to the ellipse at a point 30 mm away from the major axis. (7M)
- b) Construct a diagonal scale to read meters, tenths of a meter and centimeters to a scale of 1/50. Mark on this scale a distance of 4.47 m. (7M)
3. a) A line AB, 80 mm long is inclined at  $35^\circ$  to the HP. its end A is 18mm above the H.P. and 25mm in front of the VP. its front view measures 60mm .Draw the top view of AB and determine the inclination with VP. (8M)
- b) A point A is located in the first quadrant. The shortest distance line drawn from the point A to the intersection of HP and VP is 50 mm and this line is inclined at  $30^\circ$  to the HP. Draw the front and top views of the point A. (7M)
4. A line AB, 90 mm long is inclined at  $45^\circ$  to the HP and its top view makes an angle of  $60^\circ$  with xy. The end A is in the HP and 15 in front of VP. Draw its front and top views and find its true inclination with the VP. show the traces. (14M)
5. PQRS is a Rhombus having diagonal PR=60mm and QS=40mm and they are perpendicular to each other. The plane of the rhombus is inclined with H.P. such that its top view appears to be square. The top view of PR makes  $30^\circ$  with VP. Draw its projections and determines inclination of the plane with the HP. (14M)
6. A square pyramid, base 40 side and axis 90 long has a triangular face on the ground and the vertical plane containing the axis makes an angle of  $45^\circ$  with the VP. Draw its projection. (14M)



7. Draw the isometric projection of the block whose orthographic projections are shown figure below. (14M)



Figure



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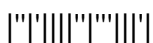
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**PART -A**

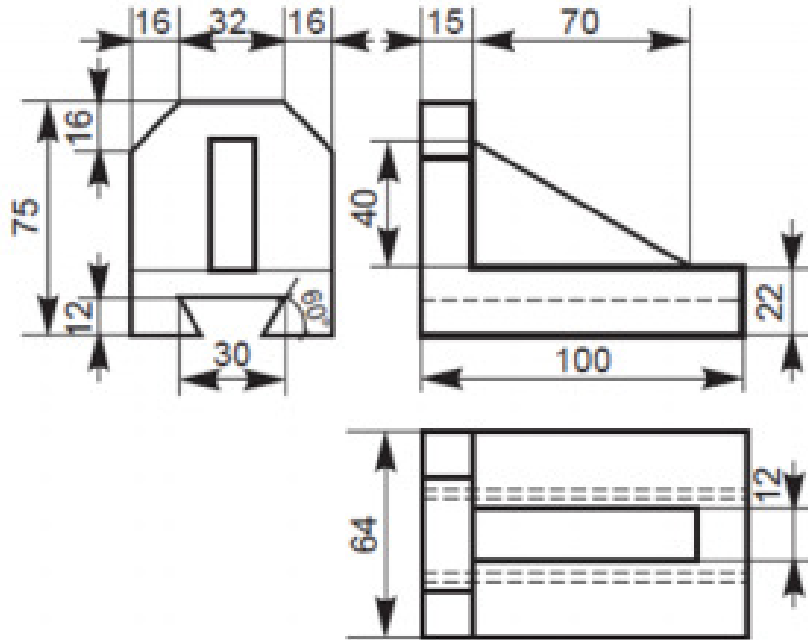
1. a) Draw a plain scale of R.F 1:40 to read Metres and Decimetres and long enough to measure up to 8 m. Show lengths of 4.3 m and 6.2 m on this scale (6M)
- b) A straight line GH has its end G is 15 mm above HP and 20 mm in front of VP. Its elevation has a length of 45 mm. The lines are inclined at 50° to VP and parallel to HP. Draw its projections and find the true length of the line. (8M)

**PART -B**

2. a) Construct Ellipse whose major and minor axes are 100 mm and 75mm respectively. (7M)
- b) The distance between two towns is 120 km. A passenger train covers the distance in 4 hours. Construct a scale to measure-off distance covered by the train in a single minute and upto 1 hour. The scale factor is 1/ 2,00,000. Show on it, the distance covered by the train in 36 minutes. (7M)
3. a) A line CD of length 70 mm is inclined at 40° with VP and parallel to profile planes. The end C is on HP and end D is on VP. Draw the projections of the line. (7M)
- b) Draw the Projections of following points: (7M)
  - (i) A point M is 35 mm above HP and 40 mm in front of VP.
  - (ii) A point B lying on HP and 55 mm in front of VP.
4. Draw the projections and traces of a line AB 100mm long inclined at 30° to HP and 45° to VP. One end is in HP and the other end is in VP. (14M)
5. A rectangular plate 50 mm x25 mm size is perpendicular to both HP and VP. The longer edges are parallel to HP and the nearest one is 20 mm above it. The shorter edge, nearer to VP is 15 mm from it. The plane is 50 mm from the profile plane. Draw the projections of the plane. (14M)
6. A pentagonal pyramid, side of pentagon 30 mm and height 70 mm is resting on HP on one of its base edges such that the triangular face containing that edge is perpendicular to HP and parallel to VP draw the projections. (14M)



7. Draw the isometric projection of the block shown in Figure below. (14M)



Figure

