

**I B. Tech I Semester Regular/Supplementary Examinations, Nov/Dec - 2017**  
**ENGINEERING DRAWING**  
 (Com. to ECE, EIE & E Com E)

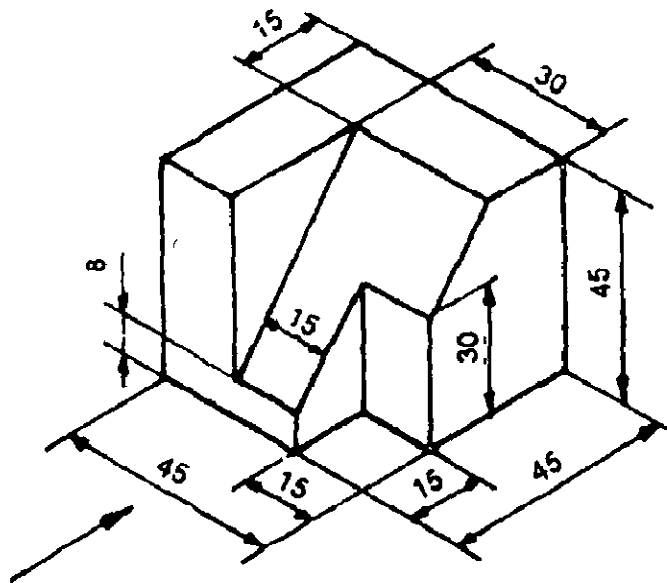
Time: 3 hours

Max. Marks: 70

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

**PART- A**

1. a) A circle 50 mm diameter rolls along a straight line without slipping. Draw the curve traced out by a point P on the circumference, for one complete revolution of the circle. Name the curve. Draw a tangent to the curve at a point on it 40 mm from the line. [6M]
- b) Draw the i) Top view ii) Left Side View iii) Front view. [8M]

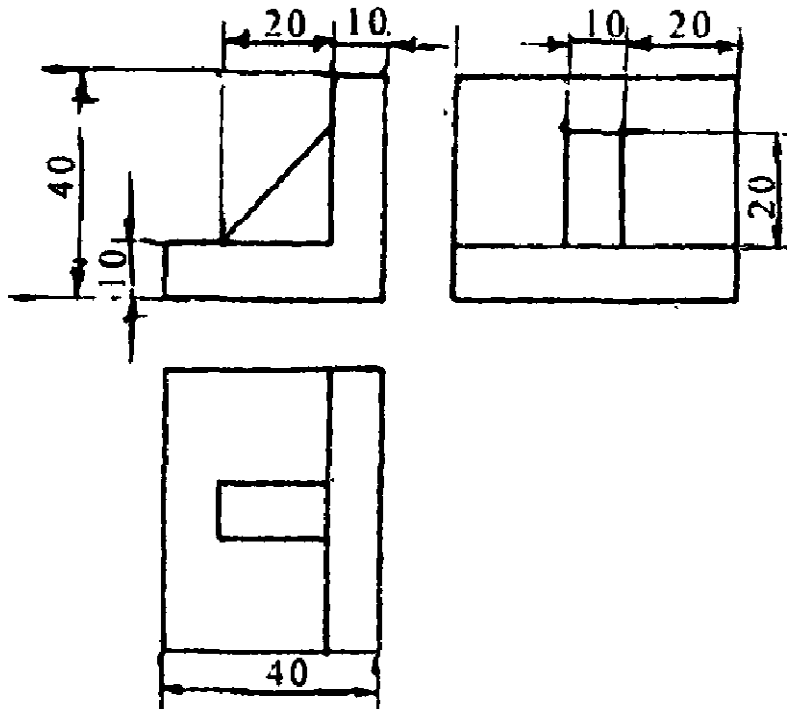


**PART- B**

2. a) The major axis of an ellipse is 150 mm long and the minor axis is 100 mm long. Find the foci and draw the ellipse. Draw a tangent to the ellipse at a point on it 25 mm above the major axis. [7M]
- b) Construct a regular hexagon of 40 mm side and draw in it, six equal circles, each touching one side of the hexagon and two other circles. [7M]



3. a) A point A is 15mm above HP and 20mm in front of VP. Another point B is 25 mm behind VP and 40mm below HP. Draw the projections of A and B, keeping the distance between the projectors equal to 90mm. Draw straight lines joining (i) the top views (ii) the front views. [7M]
- b) Construct a diagonal scale of 1: 2.5 showing centimeters and millimeters and long enough to measure up to 20 centimeters. [7M]
4. A line AB measures 100mm. The projectors through its VT and the end A are 40mm apart. The point A is 30mm below the HP and 20mm behind the VP. The VT is 10mm above the HP. Draw the projections of the line and determine its HT and inclinations with the HP and the VP. [14M]
5. A  $60^\circ$  set square of 125mm longest side is so kept that the longest side is in the HP making an angle of  $30^\circ$  with the VP and the set square itself inclined at  $45^\circ$  to the HP. Draw the projections of the set square. [14M]
6. A hexagonal prism, base 40mm side and height 40mm has a hole of 40mm diameter drilled centrally through its ends. Draw its projections when it is resting on one of its corners on the ground with its axis inclined at  $60^\circ$  to the ground and two of its faces parallel to the VP. [14M]
7. Draw the isometric view: [14M]



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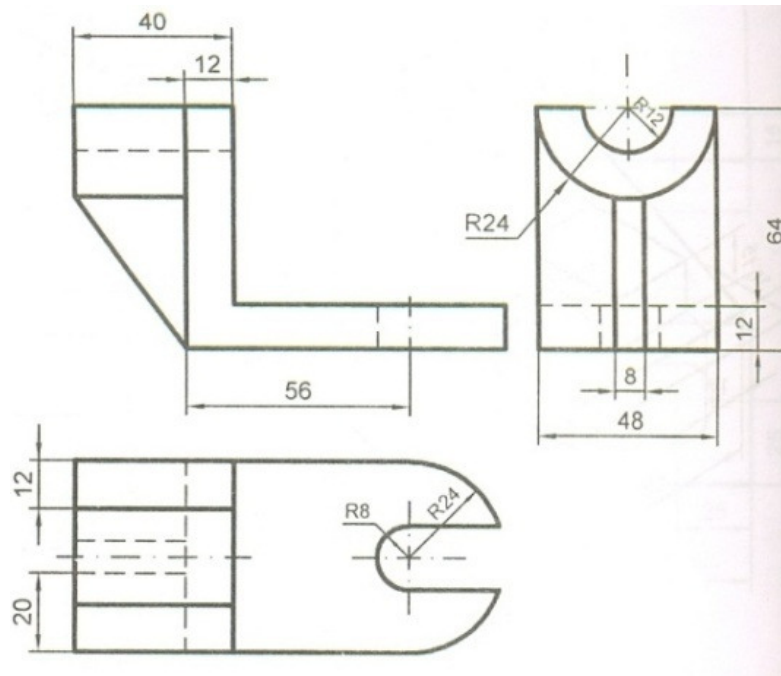
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**PART-A**

1. a) Draw the isometric view:

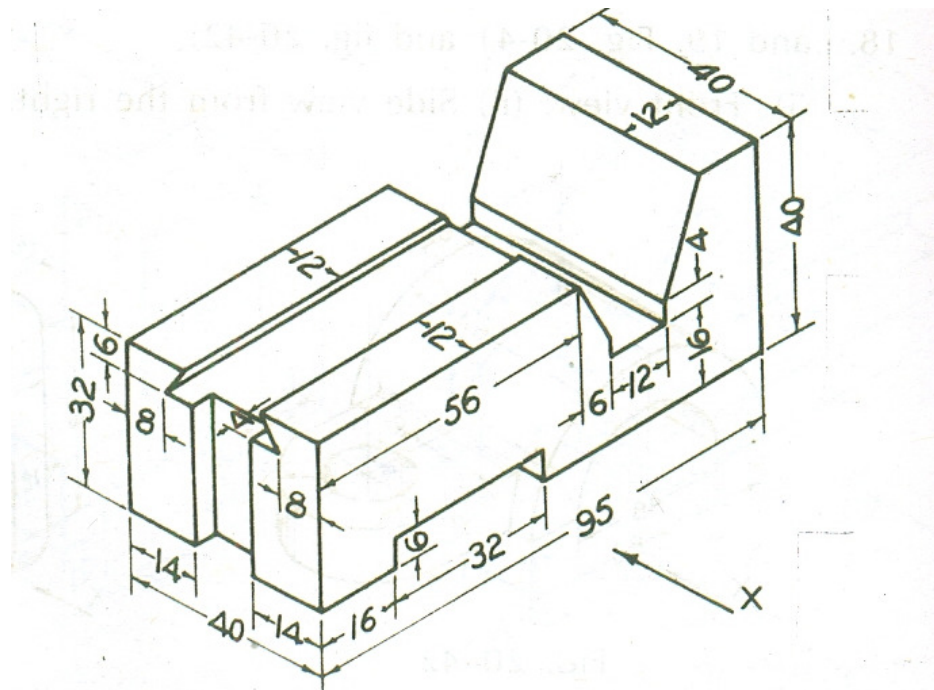
[14M]

**PART-B**

2. a) A ball thrown up in the air reaches a maximum height of 45 meters and travels a horizontal distance of 75 meters. Trace the path of the ball, assuming it to be parabolic. [7M]
- b) Draw a circle of 125 mm diameter and draw in it, five equal circles, each touching the given circle and two other circles. [7M]
3. a) Construct a diagonal scale of R.F= 1/6250 to read upto 1 kilometer and to read meters on it. Show a length of 653 meters on it. [7M]



- b) A point P is 20mm below the HP and lies in the third quadrant. Its shortest distance from xy is 40mm. Draw its projections. [7M]
4. The front view of a line makes an angle of  $30^\circ$  with xy. The HT of the line is 45mm in front of the VP while its VT is 30mm below the HP. One end of the line is 10mm above the HP and the other end is 100mm in front of the VP. [14M]
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  $30^\circ$  to the VP. The plate makes  $45^\circ$  with ground. Draw the projections of the plate and the hole. A side of the hole is parallel to the ground. [14M]
6. A hexagonal pyramid, base 25 mm side and axis 50 mm long has an edge of its base on the ground. Its axis is inclined at  $30^\circ$  to the ground and parallel to the VP. Draw its projections. [14M]
7. Draw (i) Front View (ii) Top View (iii) Side View. [14M]



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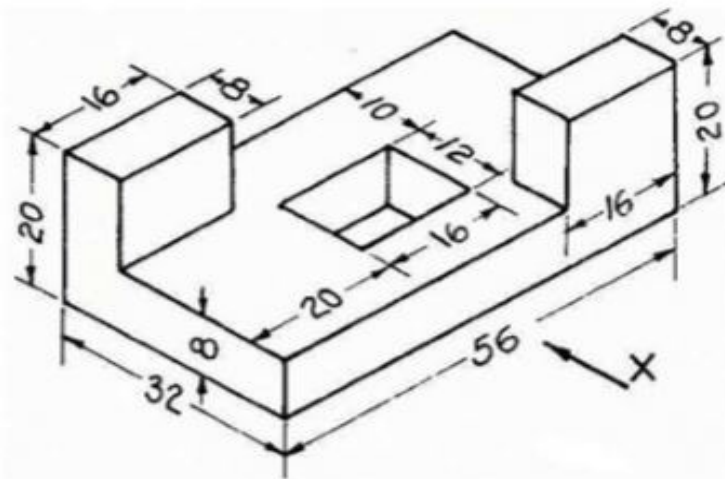
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**PART-A**

1. a) Draw the projections of a 60 mm straight line inclined at  $45^\circ$  to VP and its one end touches both the reference planes and parallel to the profile plane. [4M]
- b) Draw the Front View, Top view and side view of the figure shown below. All dimensions are in mm. [10M]

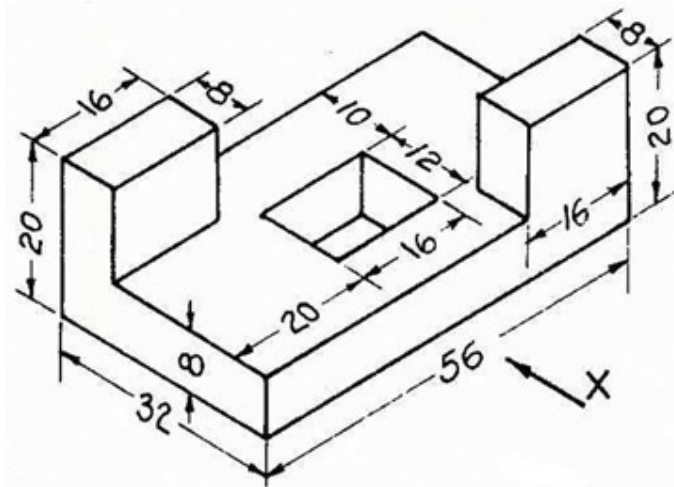


**PART-B**

2. a) The distance between two fixed points is equal to 75mm. Point P moves such that the sum of its distances from the two fixed points is always a constant and is equal to 90mm. Draw the locus of P and determine the minor axis. [7M]
- b) Outside a circle of 25 mm diameter, draw five equal circles, each touching the given circle and other two circles. [7M]
3. a) Draw the projections of a 60mm long straight line, in the following positions. [7M]
  - (i) Perpendicular to the HP, in the VP and its one end in the HP.
  - (ii) Inclined at  $45^\circ$  to the VP, in the HP and its one end in the VP.
- b) 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. [7M]



4. The projectors through the HT and VT of a line are 100 mm apart while those its ends are 65 mm apart. An end of the line is 15 mm above the HP. The HT 40 mm in front of the VP and the VT is 75 mm above HP. Draw the front view and top view of the line and find its true length. Also the inclinations the line makes with the reference planes. [14M]
5. a) A plate having shape of an isosceles triangle has base 50 mm long and altitude 70 mm. It is so placed that in the front view it is seen as an equilateral triangle of 50 mm sides one side inclined at  $45^\circ$  to xy. Draw its top view. [7M]
- b) Draw the projections of a circle of 5 cm diameter, having its plane vertical and inclined at  $30^\circ$  to VP. Its center is 3 cm above the HP and 4 cm in front of the VP. [7M]
6. Draw the projections of a cylinder 75mm diameter and 100mm long, lying on the ground with its axis inclined at  $30^\circ$  to the VP and parallel to the ground. [14M]
7. Draw the Front View, Top view & Both side views of the figure shown below. [14M]



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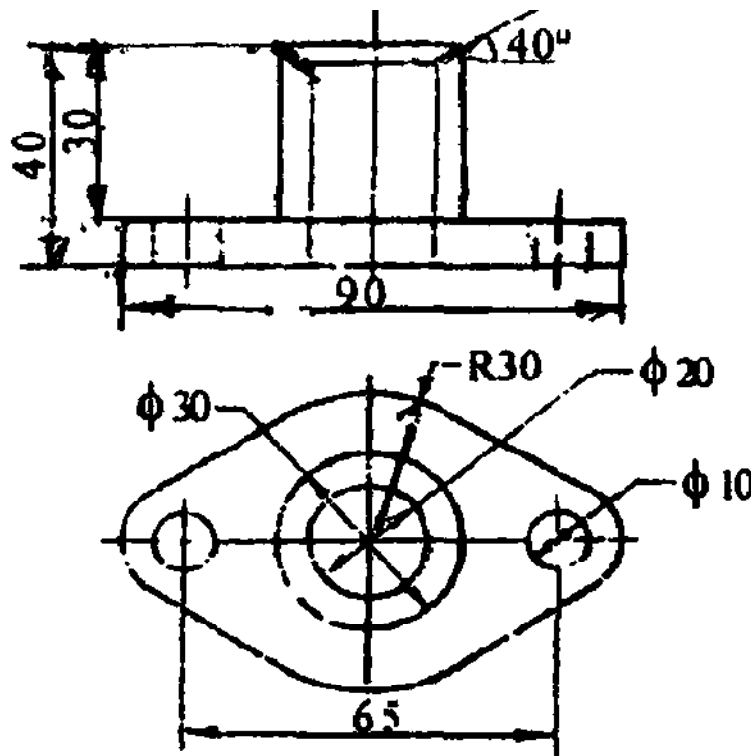
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**PART-A**

1. Draw the isometric view of the following: [14M]



**PART-B**

2. The sum of the distances of a point P from two fixed points is 120 mm and the distance between the fixed points is 80 mm. Draw the locus of the Point P. [14M]
3. a) Draw the projections of the following points, keeping the distance between the projectors as 25mm on the same reference line. [7M]
- P- 25mm above HP and 45mm in front of VP.
  - Q- 35mm above HP and 50mm behind VP.
  - R- 45mm below HP and on VP.
  - S- 30mm below HP and 40 mm in front of VP.



- b) Construct a scale to be used with a map, the scale of which is 1cm = 500m. The maximum length to be read is 5km. Mark on the scale a distance of 3.85 km. [7M]
4. A 100 mm long line is inclined at  $45^\circ$  to the HP and  $30^\circ$  to the VP. Its mid point is 25mm above the HP and 35 mm in front of the VP. Draw the projections and locate the traces. [14M]
5. a) An equilateral triangle of 40mm side is parallel to VP perpendicular to HP. Draw its projections when one of the sides is (i) Perpendicular to HP. (ii) Parallel to HP. (iii) Inclined  $45^\circ$  to HP. [7M]
- b) Draw the projections of a circle of 55 mm diameter having the end A of a diameter AB in the HP., the end B in the VP, and the surface inclined at  $30^\circ$  to the HP and one of its diameter at  $60^\circ$  to the VP. [7M]
6. A Pentagonal pyramid, base 20 mm side and axis 45 mm long is rests on one of its base edges on HP such that the triangular face containing that side is perpendicular to both HP and VP. Draw its projection. [14M]
7. Draw (i) Front View (ii) Side View from the left and (iii) Top View of the following Figure. [14M]

