Code No: R161210 $\boxed{R16}$ $\boxed{SET - 1}$

I B. Tech II Semester Regular Examinations, April/May - 2017
ENGINEERING DRAWING
(Com. to ME, CHEM, AE, AME, MM, PE, PCE, MET)

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**
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PART –A

1. a) Draw an ellipse having the major axis of 70 mm and the minor axis of 40 mm.   (6M)

    b) Draw the projections of the following points on the same ground line, keeping the   (4M)
        Projectors 20 mm apart.

        (i) Point A, 25 mm above the H.P. and 50 mm in front of V.P.

        (ii) Point B, on the H.P. and 30 mm below the V.P.

    c) An equilateral triangle plane ABC of side 40 mm has its plane parallel to VP and   (4M)
        20 mm away from it. Draw the projections of the plane when one of its side is
        perpendicular to HP.

PART –B

2. a) Construct an ellipse with its major axis is 90 mm and minor axis is 55 mm using   (7M)
        arc and circles method.

    b) Construct a plain scale of R.F. 1:50000 to show kilometers and hectometers and   (7M)
        long enough to measure up to 10 kilometers. Measure a distance of 84 hectometers
        on your scale.

3. a) A point at 35 mm above the reference line XY is the front view of two points P   (7M)
        and Q. The top view of P is 35 mm behind VP and the top view of Q is 40 mm in
        front of VP. Draw the projections of the points and state their positions relative to
        the planes of projection and the quadrants in which they lie.

    b) A line of 80 mm long is parallel to and 40 mm above HP. Its two ends are 35 mm   (7M)
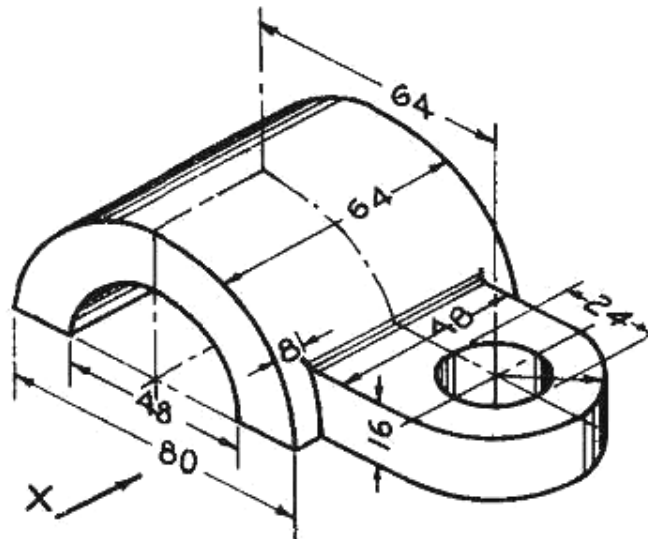   and 50 mm in front of VP respectively. Find its inclination with VP.

4. A line AB 90 mm long is inclined 45^0 to the HP and 30^0 to the VP. Its end A is in   (14M)
    HP and 40 mm in front of the VP. Draw its projections and determine the traces.

5. Draw the projections of a circle of 40 mm diameter resting in the HP on a point A   (14M)
    on the circumference, its plane inclined at 45^0 to the HP and
    a) The top view of the diameter AB making 30^0 angle with the VP.
    b) The diameter AB making 30^0 angle with the VP.

6. A square pyramid base 35 mm side and axis 80 mm long has a triangular face in   (14M)
    the HP and the vertical plane containing the axis makes an angle of 45^0 with the
    VP. Draw its projections.

7. Draw the Front View, Top view & both side views of the figure shown below. All   (14M)
    dimensions are in mm.

Code No: R161210 $\boxed{R16}$ $\boxed{SET - 2}$

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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**
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PART –A

1. a) Draw the projections of a 70 mm long straight line, in the following positions   (4M)

    (i) Inclined at 30^0 to VP, in HP and one end on VP.

    (ii) Perpendicular to the H.P, 35 mm in front of the V.P and its one end 25 mm above the H.P.

    b) Draw the projections of the following points on the same ground line, keeping the   (4M)
    Projectors 30 mm apart.

    (i) Point A, 30 mm above the H.P. and in the V.P.

    (ii) Point B,45 mm above the H.P. and 50 mm behind the V.P.

    c) Draw the isometric view of a square prism, with side of base 45 mm and length   (6M)
   of axis 90 mm, when its axis is horizontal.

PART –B

2. a) The R.F of the scale is 1/400. Construct a scale to measure a maximum distance   (7M)
    of 50 m and show a distance of 37.6 m on it.

    b) Construct a scale to be used with a map, the scale of which is 1cm = 500 m. The   (7M)
    maximum length to be read is 7 km. Mark on the scale a distance of 5.35 km

3. a) A point A is 25 mm above HP and 50 mm in front of VP. Another point B is 30   (7M)
    mm below the HP and 25 mm behind the VP. The distance between the
    projectors of the points measured parallel to XY is 75mm. Draw the projections
    of the points. Draw the lines joining their front views and top views.

    b) A line of 80 mm long is parallel to and 20 mm in front of VP. Its one end is in HP   (7M)
    while the other end is 30mm above HP. Find its inclination with HP.

4.   A line AB, 100 mm long, is inclined at 45^0 to the HP and its top view makes an   (14M)
      angle of 60^0 with the VP. The end A is in the HP and 10 mm in front of the VP.
      Draw its front view and find its true inclination with the VP.

5.   A circular plane of 50 mm diameter rests on V.P. on a point A on its   (14M)
      circumference. Its plane is inclined at 45^0 to V.P. Draw the projections of the
      plane when
      (a) The front view of the diameter AB makes 35^0 with H.P. and
      (b) The diameter AB itself makes 45^0 with H.P.

6.   A pentagonal pyramid of base edge 25mm and altitude 55 mm rests on one of its   (14M)
      edges of the base on HP such that this edge is inclined at 40^0 to VP and the slant
      face of the pyramid containing that edge is perpendicular to HP. Draw the
      projections of the solid.

7.   Draw the Front View, Top view & both side views of the figure shown below.   (14M)
      All dimensions are in mm.
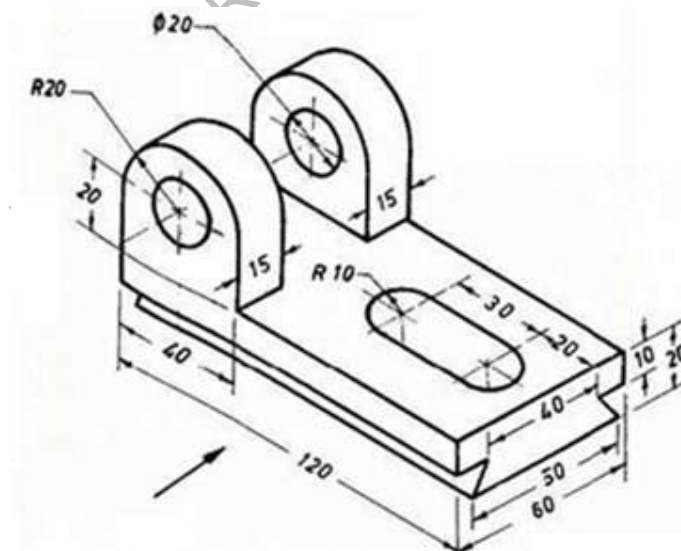
Code No: R161210   **R16**   SET - 3

I B. Tech II Semester Regular Examinations, April/May - 2017
ENGINEERING DRAWING
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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**
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PART –A

1. a) Draw the projections of a 50 mm long straight line, in the following positions   (4M)

(i) Perpendicular to HP, 30 mm in front of VP and one end on HP.

(ii) Inclined at 45^0 to the V.P, in the H.P. and its one end in the V.P.

b) Draw the projections of the following points on the same ground line, keeping the   (4M)
Projectors 25 mm apart.

(i) Point A, 50 mm below the H.P. and in the V.P.

(ii) Point B, 45 mm below the H.P. and 30 mm in front of the V.P.

c) Draw the projections of a cone, base 50 mm diameter and axis 75 mm long   (6M)
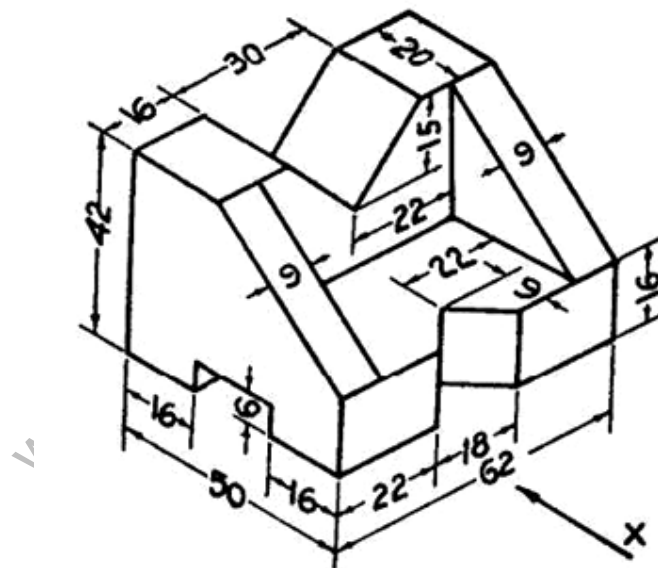resting on HP on its base.

PART –B

2. a) The major axis and minor axis of an ellipse are 70 mm and 45 mm long   (7M)
respectively. Construct an ellipse by Arc and circles method.

b) The distance between two points on a map is 15 cm. The real distance between   (7M)
them is 20 km. Draw a diagonal scale to measure up to 25 km and show a
distance of 13.6 km on it.

3. a) A point P is 25 mm above the H.P. and 20 mm in front of the V.P. Another point   (7M)
Q is 20 mm behind the V.P. and 30 mm below the H.P. Draw projections of P
and Q keeping the distance between their projectors equal to 80 mm. Draw
straight lines joining (i) their top views and (ii) their front views.

b) The front view of a line which is inclined at 30^0 to VP is 65 mm long. Draw the   (7M)
projections of the line when it is parallel to and 30 mm above HP; its one end
being 30 mm in front of VP.

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4.   A line PQ, 90 mm long measures 72 mm in front view and 65 mm in top view.   (14M)
      Draw the two views of the line if it fully lies in the first quadrant. Find the true
      inclinations of the line. Point P lies at a distance 20 mm from the reference plane.

5.   A regular hexagon of 30 mm has a corner in the HP. Its surface is inclined at 45^0 (14M)
      to the HP and the top view of the diagonal through the corner which is in the HP
      makes an angle of 60^0 with the VP. Draw its projections.

6.   A cylinder of 30 mm base diameter and 60 mm axis rests on HP with a point of   (14M)
      its base such that the axis is inclined at 30^0 to HP. Draw its projections.

7.   Draw the Front View, Top view & side view of the figure shown below. All   (14M)
      dimensions are in mm.

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Code No: R161210   **R16**   SET - 4

I B. Tech II Semester Regular Examinations, April/May - 2017
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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**
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PART –A

1. a) Divide a Straight line of 150 mm into 9 equal parts.   (4M)

    b) Draw the projections of the following points on the same ground line, keeping the   (4M)
        Projectors 30 mm apart.

        i) Point A, 20 mm below the H.P. and 45 mm behind the V.P.

        ii) Point B, on the H.P. and 45 mm in front of the V.P.

    c) A cube of 50 mm long edges is resting on the HP with its vertical faces equally   (6M)
        inclined to VP. Draw its projections.

PART –B

2. a) Construct a vernier scale to the read metres, decimetres and long enough to   (7M)
        measure up to 6 m, when 1 m is represented by 25 mm. Find R.F. and show a
        distance of 4.36 m on it.

    b) On a building plan a line 10 cm long represents a distance of 5 m. Construct a   (7M)
        diagonal scale for the plan to read upto 6 m, showing meters, decimeters and
        centimeters. Indicate on your scale the length of 3.24 m.

3. a) A point A is 20 mm in front of the V.P. and 40 mm above the H.P. Another point   (7M)
        B is 40 mm in front of the V.P. and 20 mm above the H.P. The distance measured
        between the projectors is 50 mm. Draw the projections and find the distance
        between A and B.

    b) Draw the projections of a straight line AB, 70 mm long when inclined at 45^0 to   (7M)
        HP with one end 20 mm above HP and parallel to and 30 mm in front of VP.

4. A straight line AB of 75 mm long has the end A on VP and the end B on HP. The   (14M)
    line is inclined at 30^0 to VP and its front view makes an angle of 45^0 with xy.
    Draw the projections of the line and add the left side view and locate the traces.

5. A regular hexagon of 30 mm has one of the side in the V.P. and inclined at 45^0 to   (14M)
    H.P. Its surface is inclined at 60^0 to the V.P. Draw its projections.

6. A hexagonal prism side of base 30 mm and axis 60 mm long rests with one of its   (14M)
    base corners on HP such that its base makes an angle of 50^0 to HP and its axis is
    parallel to VP. Draw its projections.

7. Draw the Front View, Top view & side view of the figure shown below. All   (14M)
    dimensions are in mm.