Code No: **R201104** **R20** **SET - 1**

I B. Tech I Semester Regular/Supplementary Examinations, February - 2023

ENGINEERING DRAWING

(Common to CE, ME, ECE, EIE, PE, FE)

Time: 3 hours Max. Marks: 70

Answer any FIVE Questions ONE Question from Each Unit
All Questions Carry Equal Marks

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UNIT-I

1. a) Construct a Hexagon of side 30 mm using Exterior angle method. [5M]

   b) Draw a rectangular hyperbola using the 'orthogonal asymptotes' method when the position of a point P on the curve is at a distance of 30 mm and 45 mm from two asymptotes and also draw a Tangent and normal at any point on the curve. [9M]

(OR)

2. a) The area of a field is 50,000 sq. m. The length and the breadth of the field, on the map is 10 cm and 8 cm respectively. Construct a diagonal scale which can read up to one metre. Mark the length of 235 metre on the scale. What is the R.F. of the scale? [7M]

   b) A line rolls over a Pentagon of 30 mm side without slipping. Draw the curve traced out by a point on the line. Name the curve. [7M]

UNIT-II

3. a) Draw the projections of the following points on the same ground lines, keeping the projectors 25 mm apart: [6M]
   (a) A in the H.P. and 20 mm behind V.P.
   (b) B 25 mm below the H.P. and 25 mm behind V.P.
   (c) C 15 mm above the H.P. and 20 mm in front of V.P.
   (d) D 40 mm below H.P. and 25 mm in front of V.P.
   (e) E is in V.P and 45 mm below the H.P

   b) A 60 mm long line AB is parallel to and 20 mm in front of the V.P. The ends A and B are 10 mm and 50 mm above the H.P. respectively. Draw the projections of the line and determine its inclination with the H.P. Also, locate the traces. [8M]

(OR)

4. A straight line PQ has its end P 20 mm above the H.P. and 30 mm in front of the V.P. and the end Q is 80 mm above the H.P. and 70 mm in front of the V.P. If the end projectors are 60 mm apart, draw the projections of the line. Determine its true length and true inclinations with the reference planes. [14M]

UNIT-III

5. a) Draw the projections of a circle 50 mm diameter resting on V.P. on a point on the circumference. The plane is inclined at 45º to V.P. and perpendicular to H.P. The centre of the plane is 35 mm above H.P. [7M]

   b) A square lamina with 40 mm sides has its surface parallel to and 30 mm in front of the V.P. Draw the projections when one of its sides is inclined at 30º to the H.P. [7M]

(OR)

6. Draw the projections of a regular hexagon of 30 mm side having one of its sides in the H.P. and inclined at 60º to the V.P. and its surface making an angle of 45º with the H.P. [14M]
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Code No: **R201104** **R20** **SET - 1**

UNIT-IV

7. a) Draw the projections of a pentagonal prism of 30 mm base side and 55 mm long axis, resting on one of its rectangular faces on the H.P. with the axis inclined at 45º to the V.P. [8M]

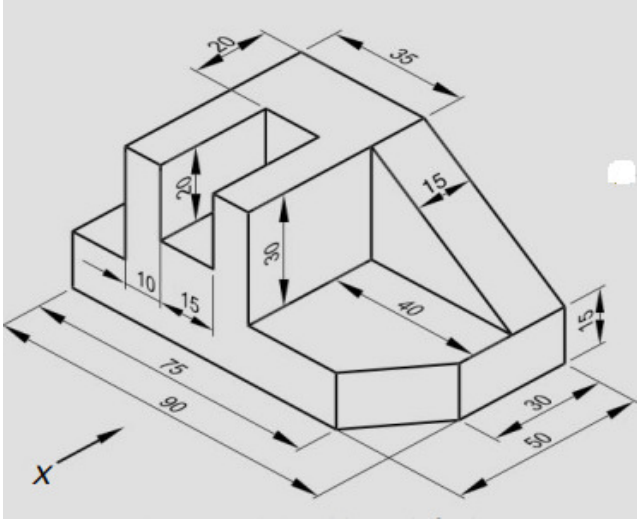
   b) Draw the projections of a tetrahedron with 65 mm long edges lying on a face in the H.P. and an edge of that face is perpendicular to the V.P. [6M]

(OR)

8. A hexagonal pyramid of 30 mm base side and 60 mm long axis has an edge of its base on the ground and the axis inclined at 35º to the H.P. The edge of the base on which it rests is inclined at 40º to the V.P. Draw its projections. [14M]

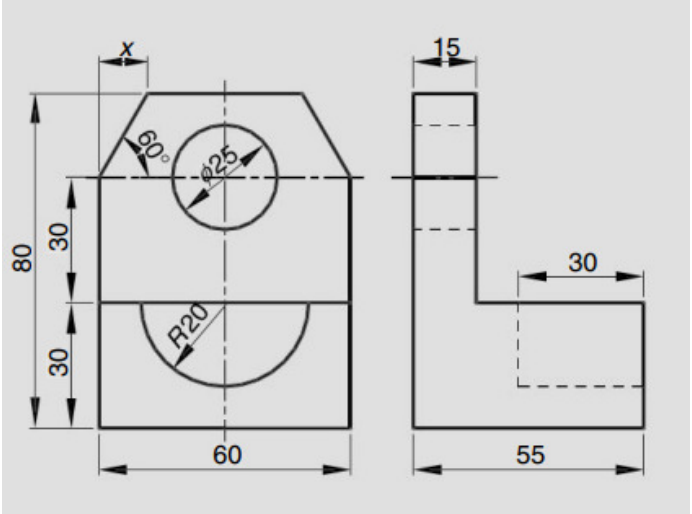
UNIT-V

9. Pictorial view of an object is shown in Fig. Using first-angle projection, draw its front view looking from the direction X, top view and side view. [14M]



(OR)

10 The figure shows the orthographic projections of an object. Draw an isometric view. [14M]



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Code No: **R201104** **R20** **SET - 2**

I B. Tech I Semester Regular/Supplementary Examinations, February- 2023

ENGINEERING DRAWING

(Common to CE, ME, ECE, EIE, PE, FE)

Time: 3 hours Max. Marks: 70

Answer any FIVE Questions ONE Question from Each Unit
All Questions Carry Equal Marks

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UNIT-I

1. a) Construct a Pentagon of side 30 mm using Interior angle method. [5M]

   b) Construct a parabola given the base 110 mm and height 80 mm by Tangent method. [9M]

(OR)

2. a) Construct a diagonal scale of 1:63360 to read miles, furlongs and chains and long enough to measure up to 6 miles. [7M]

   b) A coir is unwound from a drum of 40 mm diameter. Draw the locus of the free end of the coir for unwinding through an angle of 360º. Draw also a normal and tangent at any point on the curve. [7M]

UNIT-II

3. a) Draw the projections of the following points on the same ground lines, keeping the projectors 25 mm apart: [6M]
   (a) A in the H.P. and 20 mm behind V.P.
   (b) B 20 mm below the H.P. and 35 mm behind V.P.
   (c) C 15 mm above the H.P. and 20 mm in front of V.P.
   (d) D is in H.P. and 50 mm behind the V.P.
   (e) E is in V.P and 50 mm below the H.P

   b) An 80 mm long line AB is inclined at 30º to the V.P. and is parallel to the H.P. The end A of the line is 25 mm above the H.P. and 45 mm in front of the V.P. Draw the projections of the line and determine its traces. [8M]

(OR)

4. A line CD, 80 mm long is inclined at 45º to H.P. and 30º to the V.P., its end C is in H.P. and 40 mm in front of V.P. Draw the projections and also locate traces. [14M]

UNIT-III

5. a) A regular pentagon of 30 mm side has one side on the ground. Its plane is inclined at 45º to the H.P. and perpendicular to the V.P. Draw its projections. [7M]

   b) A hexagonal lamina with 30 mm sides has one of the sides perpendicular to V.P. The surface of lamina is parallel to and 15 mm above H.P. Draw its projections. [7M]

(OR)

6. A semicircular plate of 70 mm diameter has its straight edge on the V.P. and inclined at 30º to the H.P., while the surface of the plate is inclined at 45º to the V.P. Draw the projection of the plate. [14M]

UNIT-IV

7. a) A hexagonal pyramid with 30 mm base sides and 70 mm long axis is lying on a slant edge on the ground such that the axis is parallel to the V.P. Draw its projections. [7M]
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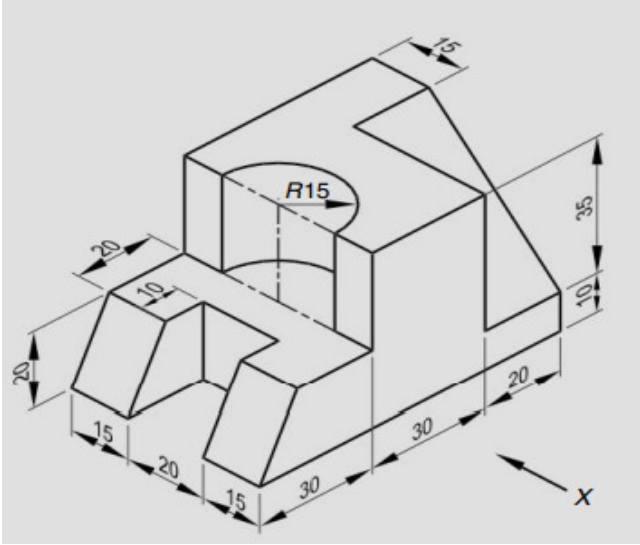
b) A cone with a 50 mm base diameter and 60 mm long axis, has a generator in the V.P. and the axis parallel to the H.P. Draw its projections. [7M]

(OR)

8. A cylinder of 50 mm base diameter and 60 mm long axis rests on a point of its base circle on the H.P. Draw its projections when the axis is making an angle of 35° with H.P. and top view of the axis is perpendicular to V.P. [14M]

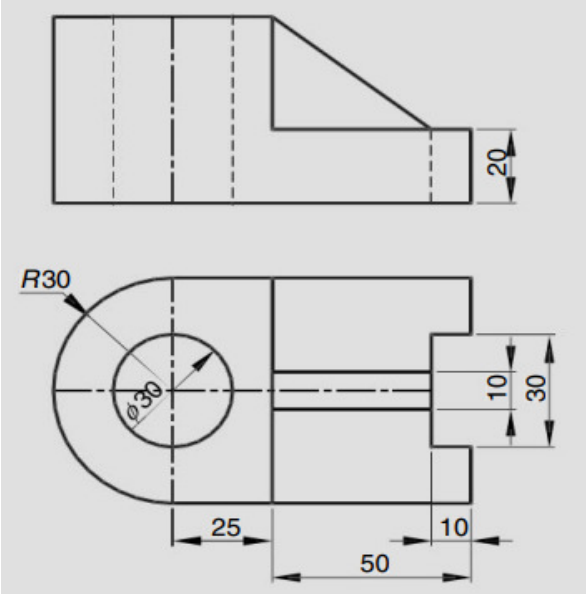
UNIT-V

9. The pictorial view of a block is shown in Fig. Draw the front view, top view and side view in first angle method of projection. Use the direction X for front view. [14M]



(OR)

10 The figure shows the orthographic projections of an object. Draw an isometric view. [14M]



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Code No: **R201104** **R20** **SET - 3**

I B. Tech I Semester Regular/Supplementary Examinations, February - 2023

ENGINEERING DRAWING

(Common to CE, ME, ECE, EIE, PE, FE)

Time: 3 hours Max. Marks: 70

Answer any FIVE Questions ONE Question from Each Unit
All Questions Carry Equal Marks

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UNIT-I

1. a) Construct an Octagon with a circle of diameter 60 mm using Circumscribed method. [6M]
   b) Inscribe the largest possible ellipse in a rectangle with 160 mm × 100 mm sides. [8M]

(OR)

2. a) Construct a scale to measure km, 1/8 km and 1/40 of a km, in which 1 km is represented by 4 cm. Mark on this scale a distance of 2.785 km. [7M]
   b) Draw an involute of a circle of 50 mm diameter. Also, draw a normal and a tangent at a point 100 mm from the centre of the circle. [7M]

UNIT-II

3. a) Draw the projections of the following points on a common reference line, keeping the distance between their projectors 30 mm apart. [7M]
   (a) Point A is 20 mm below the H.P. and 50 mm in front of the V.P.
   (b) Point B is in the H.P. and 40 mm behind the V.P.
   (c) Point C is 30 mm in front of the V.P. and in the H.P.
   (d) Point D is 50 mm above the H.P. and 30 mm behind the V.P.
   (e) Point E is 20 mm below the H.P. and 50 mm behind the V.P.
   (f) Point F is in the V.P. and 50 mm below the H.P.
   b) A 65 mm long line AB has its end A at a distance of 20 mm in front of the V.P. The line is perpendicular to the V.P. and 45 mm above the H.P. Draw the projections of the line and determine its traces. [7M]

(OR)

4. A 100 mm long line PQ is inclined at 30º to H.P. and 45º to the V.P. Its mid-point is 35 mm above the H.P. and 50 mm in front of V.P. Draw its projections and also locate traces. [14M]

UNIT-III

5. a) A hexagonal plate of 30 mm side and negligible thickness has one of its edges in the V.P. The surface of the plate is perpendicular to the H.P. and inclined at 45º to the V.P. Draw its projections. [7M]
   b) A circular plate of 50 mm diameter is held such that its plane is perpendicular to H.P. and inclined at 30º to V.P. with its centre 30 mm above the H.P. and 20 mm in front of V.P. Draw its projections. [7M]

(OR)

6. A regular hexagon of 25 mm side has a corner in the H.P. Its surface is inclined at 45º to the H.P. and the top view of the diagonal through the corner which is in the H.P makes an angle of 60º with the V.P. Draw its projections. [14M]
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Code No: **R201104** **R20** **SET - 3**

UNIT-IV

7. a) A pentagonal prism of 30 mm base edges and 60 mm long axis, has one of its bases in the V.P. Draw its projections when a rectangular face is parallel to and 15 mm above H.P [7M]

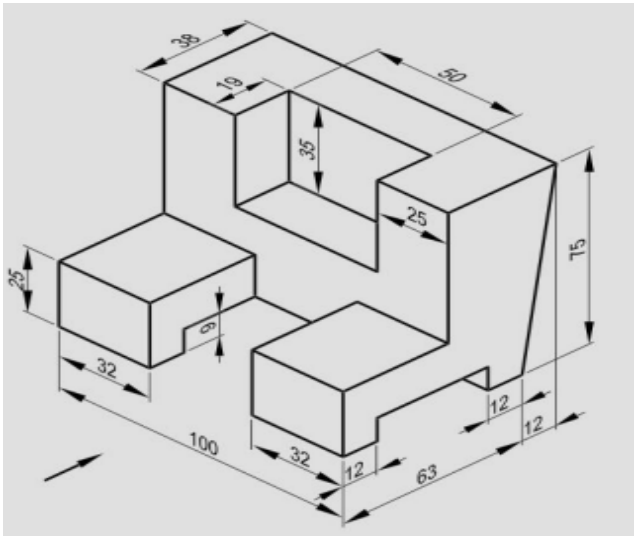
   b) A hexagonal pyramid, base 25 mm side and axis 50 mm long has an edge of its base on the ground. Its axis is inclined at 40º to the ground and parallel to the V.P. Draw its projections. [7M]

(OR)

8. Draw the projections of a cone, having a base with a 50 mm diameter and a 60 mm axis, when it is resting on the ground on a point of its base circle with the axis inclined at 35º to the H.P. and the top view of the axis is inclined at 40º with the V.P [14M]

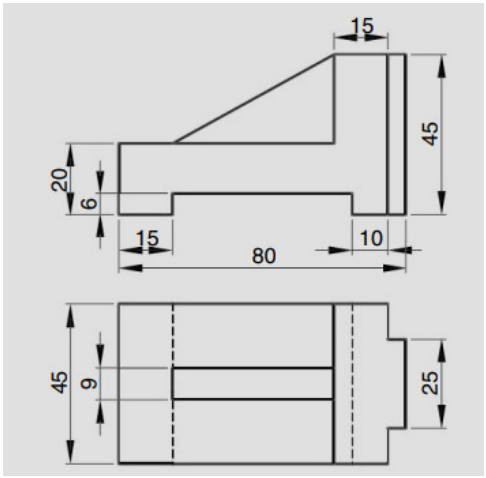
UNIT-V

9. Draw the front view, top view and right-hand side view of the object shown in Fig. [14M]



(OR)

10 The figure shows the orthographic projections of an object. Draw an isometric view. [14M]



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Code No: **R201104** **R20** **SET - 4**

I B. Tech I Semester Regular/Supplementary Examinations, February - 2023

ENGINEERING DRAWING

(Common to CE, ME, ECE, EIE, PE, FE**)**

Time: 3 hours Max. Marks: 70

Answer any FIVE Questions ONE Question from Each Unit
All Questions Carry Equal Marks

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UNIT-I

1. a) Construct regular polygon having number of sides 5, 6, 7 using General method. Take the side of the polygon is 30 mm. [6M]

   b) Construct an ellipse when the distance of its focus from its directrix is equal to 55 mm and eccentricity is 2/3. Also draw a tangent and a normal to the ellipse at a point 65 mm away from the directrix. [8M]

(OR)

2. a) Construct a scale of 1 cm = 1 m to read metres and decimeters and long enough to measure up to 14 metres. Show on this a distance equal to 12.4 m. [7M]

   b) A circle of 50 mm diameter rolls on the circumference of another circle of 175 mm diameter and outside it. Trace the locus of a point on the circumference of the rolling circle for one complete revolution. Also draw a set of tangent and normal on a suitable point on the curve. [7M]

UNIT-II

3. a) Draw the projections of the following points on a common reference line, keeping the distance between their projectors 25 mm apart. [7M]
   (a) Point A is 25 mm below the H.P. and 45 mm in front of the V.P.
   (b) Point B is in the H.P. and 45 mm behind the V.P.
   (c) Point C is 20 mm in front of the V.P. and in the H.P.
   (d) Point D is 50 mm above the H.P. and 40 mm behind the V.P.
   (e) Point E is 25 mm below the H.P. and 45 mm behind the V.P.
   (f) Point F is in the V.P. and 45 mm below the H.P.

   b) A 60 mm long line AB has its end A 20 mm above the H.P. The line is perpendicular to H.P.and 45 mm in front of the V.P. Draw its projections and locate the traces. [7M]

(OR)

4. An 75 mm long line PQ has its end P 15 mm from both H.P. and V.P. The other end Q is 35 mm above H.P. and 45 mm in front of V.P. Draw the projections of the line and determine the inclinations with H.P. and V.P. [14M]

UNIT-III

5. a) A hexagonal plate of 25 mm side is resting on one of its corner on H.P. The plate is perpendicular to V.P. and inclined at 45º to the H.P. Draw its projections [7M]

   b) Draw the projections of a circle of 50 mm diameter, resting on H.P. on a point on the circumference. Its plane is inclined at 30° to the H.P. and perpendicular to the V.P. Its centre is 40 mm in front of the V.P. [7M]

(OR)

6. Draw the projections of a rhombus having 100 mm and 40 mm long diagonals. The bigger diagonal is inclined at 30º to H.P. with one of the end point in H.P. and the smaller diagonal is parallel to both the planes. [14M]

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Code No: **R201104** **R20** **SET - 4**

UNIT-IV

7. a) A square pyramid, side of base 40 mm and axis 60 mm is resting on its base on H.P. Draw its projections when all the sides of the base are equally inclined to V.P [7M]

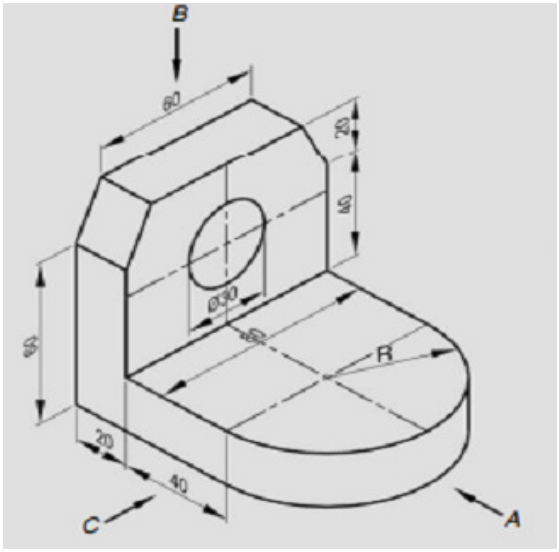
   b) Draw the projections of a cylinder of 50 mm diameter and 65 mm long axis when it is lying on H.P. with axis inclined at 45º to H.P. and parallel to V.P. [7M]

(OR)

8. A cylinder of 48 mm base diameter and 65 mm long axis has a point of its base circle in the V.P. Its axis is inclined at 35º to V.P. and 40º to the H.P. Draw its projections. [14M]

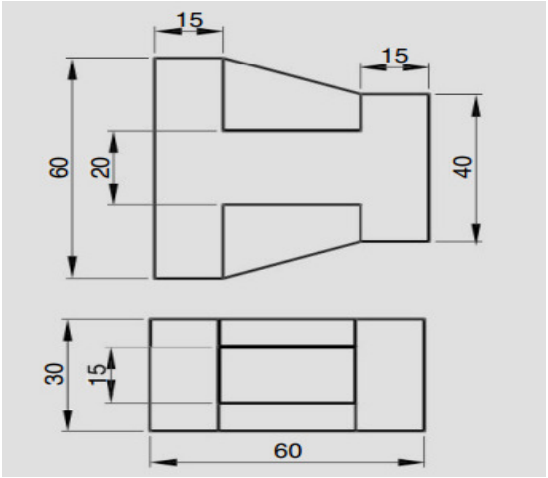
UNIT-V

9. The isometric view of an object is shown in Fig. Draw its three views looking from the directions shown. [14M]



(OR)

10 The figure shows the orthographic projections of an object. Draw an isometric view. [14M]



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