I B. Tech I Semester Regular Examinations, April - 2022
ENGINEERING DRAWING
(Com. to CE, ME, ECE, EIE, Pet E, Food Eng)

Time: 3 hours　　　　　　　　　　　　　　　　　　　　　　　　Max. Marks: 70

Answer any five Questions one Question from Each Unit
All Questions Carry Equal Marks

UNIT-I

1. a) Construct a hyperbola, with the distance between the focus and the directrix as 50 mm and eccentricity as 3/2.　(6M)

    b) Construct a Diagonal scale of RF = 3:200 showing meters, decimeters and centimeters. The scale should measure up to 6 meters. Show a distance of 4.56 meters.　(8M)

Or

2. a) A roller of 40 mm diameter rolls over a horizontal table without slipping. A point on the circumference of the roller is in contact with the table surface in the beginning till one end of revolution. Draw the path traced by the point.　(10M)

    b) Inscribe a regular pentagon in a circle of radius 30mm.　(4M)

UNIT-II

3. a) A line PQ has its end P 15 mm above HP and 10 mm infront of VP. The end Q is 55 mm above HP and the line is inclined at 35° to HP. The distance between the ends projectors of the line when measured parallel to the line of intersection of HP and VP is 50 mm. Draw the projections of the line and find its true length and true inclination with VP.　(9M)

    b) Draw the projections of the following points on the same ground line, keeping the Projectors 20mm apart.
    (a) Point A, 20mm above the H.P. and 30mm infront of the V.P.
    (b) Point B, on the H.P. and 40mm infront of the V.P.
    (c) Point C, 15mm above the H.P. and in the V.P.
    (d) Point D,15mm above the H.P. and 50mm behind the V.P.　(5M)

Or

4. a) A point P is 15mm below HP and 25mm in front of VP. Another point Q is 25mm above HP and 15mm behind VP. The distance between the end projectors is 60mm. Draw the projections and join the line joining their plans and elevations.　(7M)

    b) A line IJ 50mm long has its end I 30mm above the HP and 25mm in front of VP. The line is kept inclined at 40^0 to HP and parallel to VP. Draw its projections and make its traces.　(7M)

UNIT-III

5. a) Draw the projections of a triangular plate of 30 mm sides, having one of its sides AB in the VP and with its surface inclined at 60^0 to the VP.　(9M)

    b) A square plane ABCD of 30mm side has its surface parallel to HP and 20mm away from it. Draw its projections of the plane when two of its sides are inclined at 30^0 VP.　(5M)

Or

6.　A composite plate of negligible thickness is made up of a rectangle 60mm × 40mm, and a semi circle on its longer side. Draw its projections when the longer side is parallel to the HP and inclined at 45^0 to the VP, the surface of the plate making 30^0 angle with the HP.　(14M)

UNIT-IV

7.　a)　A pentagonal pyramid of base 30mm and height 60mm rests with one of its base edges on HP. The axis of the pyramid makes an angle of 45^0 with HP. Draw its projections.　(8M)

　　b)　A square pyramid of base side 25mm and axis 60mm is resting on its base on the H.P. Draw its projections when a side of the base is parallel to the V.P.　(6M)

Or

8.　A pentagonal prism 25mm sides of base and 60mm axis length rests on HP on one of its edges of the base which is inclined at VP at 30^0. Draw the projections of the prism when the axis is inclined to HP at 40°.　(14M)
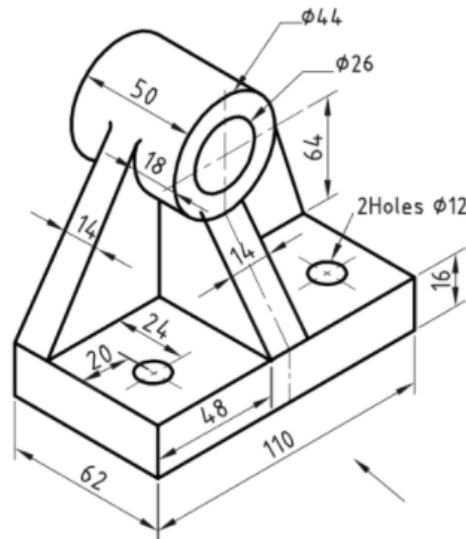
UNIT-V

9.　Fig. below shows the FV and TV of the objects. Draw their isometric projection.　(14M)
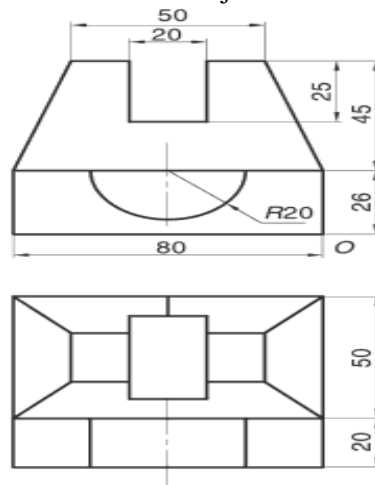
Or

10　Draw the front view, top view and side view of object as shown in fig. below　(14M)

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UNIT-I

1. a) Draw the path traced by a point at the end of a string, when it is wound around a square of size 40 mm. (7M)

   b) When a cricket ball was thrown, it reached a maximum height of 9m and fell on the ground at a distance of 25m from the point of projection. Draw the path of the ball. (7M)

Or

2. a) Construct an ellipse when the distance between the focus and the directrix is 35mm and the eccentricity is 3/4. (6M)

   b) Construct a vernier scale to the read metres, decimetres and centimeters and long enough to 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. (8M)

UNIT-II

3. a) A point S is on both HP and VP. Another point T is 35mm above HP and 40 mm in front of VP. Draw its projections when the line joining their top views is 70mm. Also draw and measure the line joining their front views. (7M)

   b) A 100mm long line is parallel to and 40mm above the H.P. Its two ends are 25mm and 50mm in front of the V.P. respectively. Draw it projections and find its inclination with the V.P. (7M)

Or

4. The top view of a 75mm long line AB measures 65mm, while the length of its front view is 50mm. Its one end A is in the H.P. and 12mm in front of the V.P. Draw the projections of AB and determines its inclinations with the H.P. and the V.P. locate the traces. (14M)

UNIT-III

5. a) A square plane ABCD of 30mm side has its surface parallel to HP and 20mm away from it. Draw its projections of the plane when two of its sides are equally inclined to VP. (5M)

   b) Draw the projections of a circle of 40 mm diameter, resting on HP on a point on the circumference. Its plane is inclined at 30^0 to the HP. and perpendicular to the VP. Its center is 35mm in front of the VP. (9M)

Or

6. A hexagonal lamina of 35mm side stands with one of its edges parallel to and 20mm in front of VP. such that the surface is 45^0 inclined to VP. if the edge parallel to VP is inclined at 60^0 to HP. Draw the projections of the lamina. (14M)

UNIT-IV

7. a) A square pyramid of base 30mm and height 60mm rests with one of its base edges on HP. The axis of the pyramid makes an angle of 50^0 with HP. Draw its projections. (8M)

b) A tetrahedron of 5 cm long edge is resting on the ground on one of its faces, with an edge of that face parallel to the V.P. Draw its projections and measure the distance of its apex from the ground.   (6M)

Or.

8. A hexagonal prism, base 30 mm side and axis 75 mm long, has an edge of the base parallel to the H.P. and inclined at 45° to the V.P. Its axis makes an angle of 60° with the H.P. Draw its projections.   (14M)
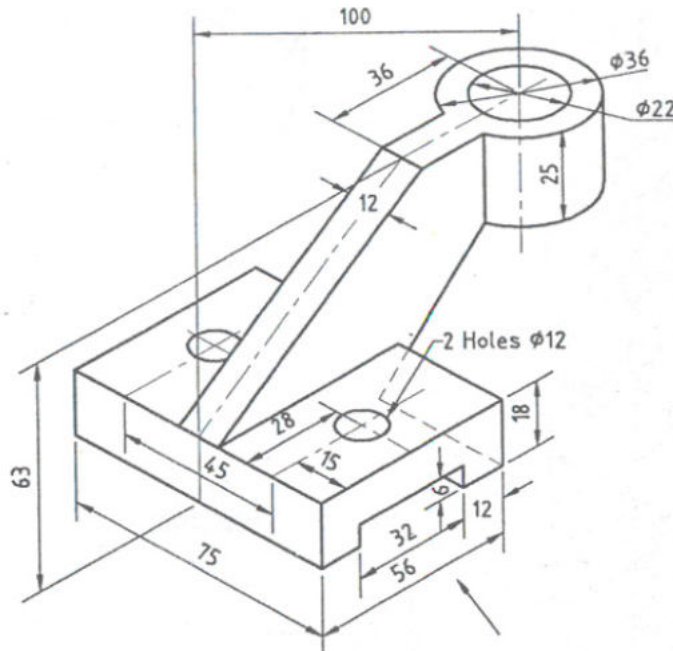
UNIT-V

9. Fig. below shows the FV and SV of an object. Draw its isometric view.   (14M)

Or
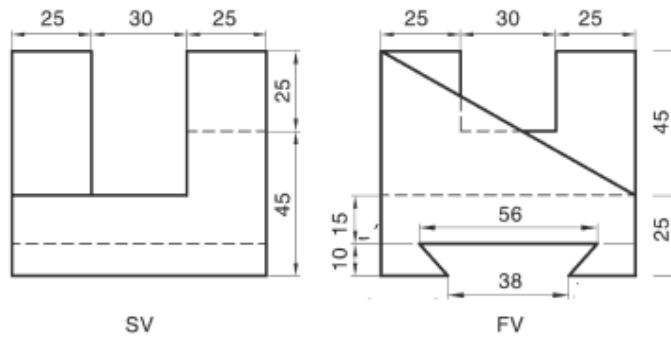
10 Draw the elevation, plan and left side view of the object given below.   (14M)

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Answer any five Questions one Question from Each Unit
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UNIT-I

1. a) A circle of 35mm diameter rolls on a horizontal line. Draw the curve traced out by a point R on the circumference for one half revolution of the circle. For the remaining half revolution, the circle rolls on the vertical line. The point R vertically above the center of the circle in the starting position. (10M)

   b) Circumscribe a regular hexagon about a circle of radius 20mm. (4M)

Or

2. a) A ball thrown in air attains 100m height and covers horizontal distance 150m on the ground. Draw the path of the ball (projectile) (6M)

   b) The distance between two points on a map is 15cm. The real distance between them is 20km. Draw a diagonal scale to measure up to 25km and show a distance of 13.6 km on it. (8M)

UNIT-II

3. a) Draw the projections of the following points on a common reference line. (6M)
   (i) P, 35mm behind the VP and 20mm below the HP
   (ii) Q, 40mm in front of the VP and 30mm above the HP
   (iii) R, 50mm behind the VP and 15mm above the HP
   (iv) S, 40mm below the HP and in the VP.

   b) A line measuring 60 mm long has one of its end 40 mm above H.P and 30 mm in front of VP. The other end is 25 mm above HP and in front VP. The front view of the line is 55 mm long. Draw the top view. (8M)

Or

4. A line AB 120mm long is inclined at 45^0 to the H.P. and 30^0 to the V.P. Its midpoint C is in V.P. and 20mm above H.P. The end A is in the third quadrant, and B is in the first quadrant Draw the projections of the line. (14M)

UNIT-III

5. a) A regular pentagon ABCDE of side 30mm is parallel to the VP. The side AB is perpendicular to the HP. Draw the projections of the pentagon. (5M)

   b) A square plate with 35mm sides is inclined at 45° to the VP and perpendicular to the HP. Draw the projections of the plate if one of its corners is in the VP and the two sides containing that corner are equally inclined to the VP (9M)

Or

6. A hexagonal plane surface of 25mm sides has one of its corners on the HP, with the surface inclined at 45^0 to the HP and the top view of the diagonal passing through that corner is perpendicular to the VP. Draw the projections of the plate. (14M)

UNIT-IV

7. A cone of base diameter 50 mm and axis 70 mm long rests with one of the points on the circumference of its base on H.P. Its axis is inclined at 35^0 to H.P. and 45^0 to V.P. Draw its projections. (14M)

Or

8. a) A cylinder of base diameter 40 mm and axis 55 mm long rests on HP on a point on the circumference of the base with its axis inclined at 35^0 to HP and parallel to VP. Draw its projections. (8M)

b) A hexagonal prism of base side 25mm and axis 60 mm has one of its bases in the V.P. Draw its projections when a rectangular face is parallel to and 15mm above the H.P (6M)
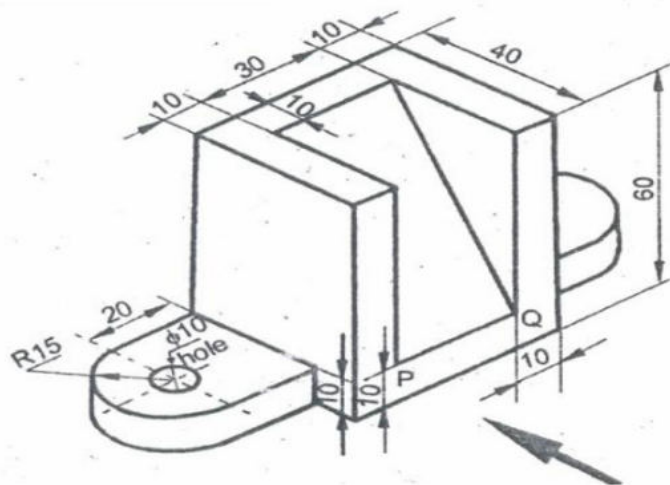
UNIT-V

9. Fig. below shows FV, TV and SV of an object. Draw the isometric view. (14M)
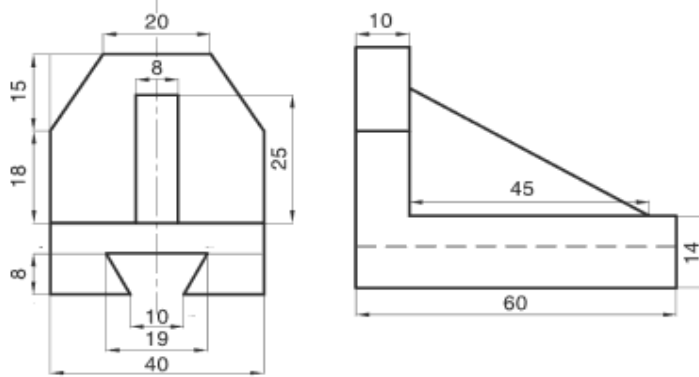
Or

10 Draw the front, top and left side view of the block shown below. (14M)

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UNIT-I

1. a) A coin of 35 mm diameter rolls over dining table without slipping. A point on the circumference of the coin is in contact with the table surface in the beginning and after one completer revolution. Draw the curve traced by the point. Draw a tangent and normal at any point on the curve. (8M)

   b) Draw a parabola when the distance of the focus from the directrix is equal to 50mm. Also draw a normal and a tangent at any point on the curve. (6M)

Or

2. a) Construct an ellipse when its major axis is 120mm and the distance between the foci is 108mm. Determine the length of the minor axis (6M)

   b) Construct a diagonal scale of 1:32 to read meters, decimeters, and centimeters and long enough to measure 4m. Show on this scale a distance of 2.46m. (8M)

UNIT-II

3. a) A point M is lying in the first quadrant. The shortest distance of the point from XY line is 55mm. If the point is 30mm above HP, draw its projections. (6M)

   b) A line MN 50mm long has its end M 30mm above HP and 25mm in front of VP. The line is kept inclined at 30^0 to VP and parallel to HP. Draw its projections and make its traces. (8M)

Or

4. A line AB, 65mm long, has its end A 20mm above the H.P. and 25mm in front of the V.P. The end B is 40mm above the H.P. and 65mm in front of the V.P. Draw the projections of AB and show its inclinations with the H.P. and the V.P. (14M)

UNIT-III

5. a) A rectangle ABCD of size 30mmX20 mm is parallel to the HP and has a shorter side AB perpendicular to the VP. Draw its projections. (5M)

   b) An equilateral triangle side 60mm is perpendicular to both the HP and the VP. one of the corners of the triangle is on the HP and an edge through that corner is inclined at 45^0 to the HP. Draw the projections of the triangle. (9M)

Or

6. A regular pentagon ABCDE of side 30mm has one of its edges parallel to the VP and inclined at 30^0 to the HP. The pentagon is inclined at 45^0 to the VP. Draw the projections. (14M)

UNIT-IV

7. a) A pentagonal pyramid with side of the base 30 mm and axis 60mm long is resting on one of its base edges on HP and the triangular face containing the resting edge is perpendicular to HP and parallel to VP. Draw the projections. (8M)

   b) Draw the projections of the a square pyramid of base edges 30 mm and axis 54 mm, resting on its base on HP. with one of base edges parallel to VP. and axis perpendicular to the HP. (6M)

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Or

8.   A pentagonal prism is resting on corner of its base on the ground with a longer   (14M)
edge containing that corner inclined at 45^0 to the H.P. and the vertical plane
containing that edge and the axis inclined at 30^0 to the V.P. Draw its projections.
Base 40 mm side; height 65 mm.

UNIT-V

9.   Fig. below shows two views of an object. Prepare the isometric drawing of the   (14M)
object.

Or
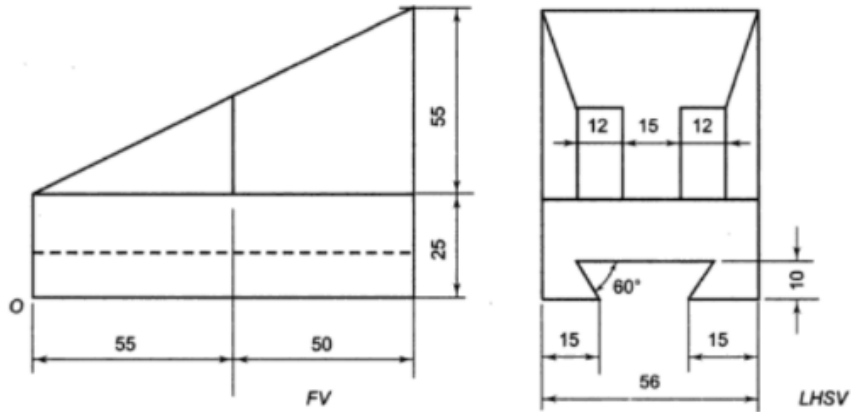
10   Draw the elevation, top view and side view of the following machine part as   (14M)
shown in Fig.1below. (All dimensions are in mm.)

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