IX. Old Question Papers

QP Code: 23ME103 Hall Ticket No:

NARSIMHAREDDY ENGINEERING COLLEGE
(UGC AUTONOMOUS)
I B.Tech I Semester (NR23) Regular Examination, January/February 2024
COMPUTER AIDED ENGINEERING GRAPHICS
(Computer Science and Engineering)
Time : 3 hours Maximum marks: 60

Note: • Answer one question from each unit. Each question carries 12 Marks and may have a, b sub questions

Answer all the Units (60 Marks)
All Questions carry equal Marks

Q.No		Question	M	CO	BL
		UNIT-I			
1)	a.	Construct a rectangular hyperbola when a point P on it is at a distance of 30 mm and 40 mm respectively from the two asymptotes	6	CO1	L4
	b.	Construct a scale of 1:4 to show centimetres and long enough to measure upto 5 decimeters. Mark a distance of 3.7 decimeter on it.	6	CO1	L4
		OR			
2)	a.	Construct a hyperbola when distance of focus from directrix equal to 60 mm and eccentricity is 3/2.	6	CO1	L4
	b.	A circle of 60 mm diameter rolls on a horizontal line for one revolution clock - wise. Draw the curve traced by a point P on the circumference the circle.	6	CO1	L3
		UNIT-II			
3)	a.	A point 30mm above xy line is the plan-view of two points P and Q. The elevation of P is 45mm above HP, while that of Q is 35mm below the HP. Draw the projections of the points and states their position with reference to the principal planes and the quadrant in which they lie.	6	CO2	L4
	b.	A 60 mm long line RS has its end R 20 mm above HP. The line is perpendicular to the HP and 40 mm in front of the VP. Sketch the projections of the line.	6	CO2	L3
		OR			
4)	a.	A Square ABCD of 40 mm side has its corner A in the HP its diagonal AC inclined at 30° to the HP and diagonal BD inclined at 45° to the VP and parallel to HP. Draw its Projections	6	CO2	L4
	b.	A point P is 15 mm above HP and 20mm infront of VP. Another point Q is 25 mm behind VP and 40 mm below HP. Draw the projections of P and Q keeping the distance between projectors equal to 90 mm. Draw straight lines joining their front views and top views	6	CO2	L4
		UNIT-III			
5)		A cylinder 50 mm diameter and 60 mm axis is resting on one of a base circle on VP while its axis makes 45° with VP and front view (FV) of the axis 35° with HP. Sketch its projections	12	CO3	L4
		OR			
6)		A hexagonal pyramid of side of base 30 and length of axis 70, is resting on a corner with the Containing longer edge on H.P. It is cut by a section plane parallel to H.P. and passing through the mid-point of the axis. Sketch the front and sectional top views of the solid	12	CO3	L4
		UNIT-IV			
7)		A cone of base 50 diameter and axis 60 mm long, is resting on its base on H.P. It is cut by section plane. Perpendicular to V.P. & parallel to extreme generators & passing through a point on axis at a distance of 20 mm from apex. Draw a development of solid.	12	CO4	L4
		OR			
8)		A pentagonal pyramid of side of base 30 mm and axis 60 mm long is resting on its base on H.P with an edge of the base parallel to V.P. Draw the development of the lateral surface of the pyramid.	12	CO4	L3
		UNIT-V			
9)		Draw the front, top and side views of the isometric view given in figure below.	12	CO5	L4
		OR			
10)		Draw the isometric view of Door-Steps having three steps of 25cm length and 15cm rise. The steps measure 75cm width wise.	12	CO5	L4

---oo0oo---

QP Code: 23MI103 Hall Ticket No

NARSIMHAREDDY ENGINEERING COLLEGE
(UGC AUTONOMOUS)
I B.Tech I Semester (NR23) Regular Examination, January/February 2024
COMPUTER AIDED ENGINEERING GRAPHICS
(Computer Science and Engineering)

Time : 3 hours Maximum marks: 60

Note: • Answer one question from each unit Each question carries 12 Marks and may have a, b sub questions

Answer all the Units (60 Marks)
All Questions carry equal Marks

Q.No		Question	M	CO	BL
		UNIT-I			
1)	a	Draw the ellipse with distance of the focus from the directrix as 50 mm & eccentricity as 2/3	6	CO1	L3
	b	Draw a scale of 1:60 to show meters and decimeters and long enough to measure upto 6 meters Mark a distance of 4.6 meter on it	6	CO1	L4
		OR			
2)	a	Draw a parabola, when the distance of the Focus from the directrix is 60 mm	6	CO1	L4
	b	Construct the path traced by a point on a circular disc of radius 30 mm rolls in a circular path of radius 100 mm outside it Name the curve	6	CO1	L4
		UNIT-II			
3)		Draw the projections of the following points on the same ground line keeping the distance between projectors 25mm i A in HP and 20 mm behind VP ii B is 30 mm above HP and 25 mm infront of VP iii C is in VP and 30 mm above HP iv D is 25 mm below HP and 15 mm behind VP v E is 15 mm above HP and 40 mm behind VP and vi F is 30 mm below HP and 25 mm infront of VP	12	CO2	L5
		OR			
4)	a	Draw the projections of a regular hexagon of 25mm side, having one of its sides in the HP and inclined at 60° to the VP and its surface making an angle of 45° with the HP	6	CO2	L4
	b	A line AB 75mm long has its end A 10 above HP and 20 mm in front of VP the line is inclined at 45° to HP and 30° to V P Draw the projections of lines	6	CO2	L3
		UNIT-III			
5)		A cone 50 mm diameter and 60 mm axis is resting on one of its generator on HP which makes 30° inclination with VP Draw its projections	12	CO3	L4
		OR			
6)		A hexagonal pyramid of side of base 30 and length of axis 70 is resting on a corner which contains the longest edge on HP It is cut by a section plane parallel to HP and passing through the mid point of the axis Sketch the front and sectional top views of the solid	12	CO3	L4
		UNIT-IV			
7)		A cylinder of base 40 diameters and axis 55mm long is resting on its base on HP It is cut by section plane Perpendicular to V P & inclined at 45° to HP The section plane passing through the top end of the extreme generators of cylinder Draw the development of lateral surface of the cylinder	12	CO4	L4
		OR			
8)		A square pyramid of base side 25 mm and altitude 50 mm rests on its base on the HP with two sides of the base parallel to VP It is cut by a plane bisecting the axis and inclined at 30° to the base Draw the development of the pyramid	12	CO4	L3
		UNIT-V			
9)		Draw the front, top and side views of the isometric view given in figure below 	12	CO5	L4
		OR			
10)		Draw the isometric projection of the Pentagonal Pyramid of side 30 mm and axis 70mm Long and also the draw the front and top view of the solid	12	CO5	L4

—ooOoo—

R22

Code No: 181AG

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech I Year I Semester Examinations, March/April - 2023
COMPUTER AIDED ENGINEERING GRAPHICS
(Computer Science and Engineering)

Time: 3 Hours **Max. Marks: 60**

Note: This question paper contains two parts A and B.
i) **Part- A** for 10 marks, ii) **Part - B** for 50 marks.
- Part-A is a compulsory question which consists of ten sub-questions from all units carrying equal marks.
- Part-B consists of **ten questions** (numbered from 2 to 11) **carrying 10 marks each**. From each unit, there are two questions and the student should answer one of them. Hence, the student should answer five questions from Part-B.

PART- A

(10 Marks)

1.a)	What is diagonal scale?	[1]
b)	What is a rectangular hyperbola?	[1]
c)	What is a profile plane?	[1]
d)	What is the difference between regular plane and irregular plane?	[1]
e)	When do we get the true shape of a solid in side view?	[1]
f)	What is meant by platonic solid?	[1]
g)	In development of surfaces, we have to take all dimensions as true lengths – why?	[1]
h)	What type of solids can be accurately developed?	[1]
i)	What is non-isometric plane?	[1]
j)	Distinguish between isometric view and isometric projection.	[1]

PART - B

(50 Marks)

2.a) Construct a diagonal scale 1/50, showing meters, decimeters and centimeters, to measure up to 5 meters. Mark a length 4. 68 m on it.

b) A coin of 40 mm diameter rolls over a horizontal table without slipping. A point on the circumference of the coin is in contact with the table surface in the beginning and after one complete revolution. Draw the path traced by the point. Draw a tangent and normal at a point 25 mm from the table. [5+5]

OR

3.a) Draw A parabola with the distance between directrix and focus as 60 mm. Draw normal and tangent at any point on the curve.

b) Construct a diagonal scale of RF = 1/6250 to read up to 1 km and to read meters on it. Show a length of 653 meters on it. [5+5]

4. A line AB inclined at 30^0 to the HP has its ends A and B, 25 mm and 60 mm behind the VP, respectively. The length of the top view is 65 mm and its VT is 15 mm below the HP. Draw the projections of the line and locate its HT. Also, determine the true length of the line AB and true inclination of the line with VP. [10]

OR

5. The end A of diameter AB of a circle is in HP and the end B is in VP. The diameter AB, 50 mm long is inclined at 30^0 to HP and at 60^0 to VP respectively. Draw the projections of the circle. [10]

6. A cube of 70 mm long edges has its vertical faces equally inclined to the VP. It is cut by an auxiliary inclined plane in such a way that the true shape of the cut part is a regular hexagon. Determine the inclination of the cutting plane with the HP. Draw front view, sectional top view, and true shape of the section. [10]

OR

7. A hexagonal prism of side of base 35 mm and axis length 55 mm rests with its base on the HP such that two of the vertical surfaces are perpendicular to VP. It is cut by a plane inclined at 50° to HP and perpendicular to VP, and passing through a point on the axis at a distance of 15 mm from the top. Draw its front view, sectional top view, and the true shape of section. [10]

8. A cone of base diameter 40 mm and slant height 60 mm is kept on the ground on its base. An AIP inclined at 45° to the HP cuts the cone through the midpoint of the axis, and the top portion is removed. Draw the development of the remaining portion of cone. [10]

OR

9. A cylinder of 50 mm base diameter and axis 70 mm long rests on its base in the HP. A square cutout of 35 mm side is drilled through the cylinder such that the axis of cutout is perpendicular to the axis of the cylinder. The center of the cutout is 35 mm above HP and 15 mm away from the axis of cylinder. Two faces of the cutout are equally inclined to HP. Develop the lateral surfaces. [10]

10. Draw the front view, top view, and side view of the object shown in Figure.1. [10]

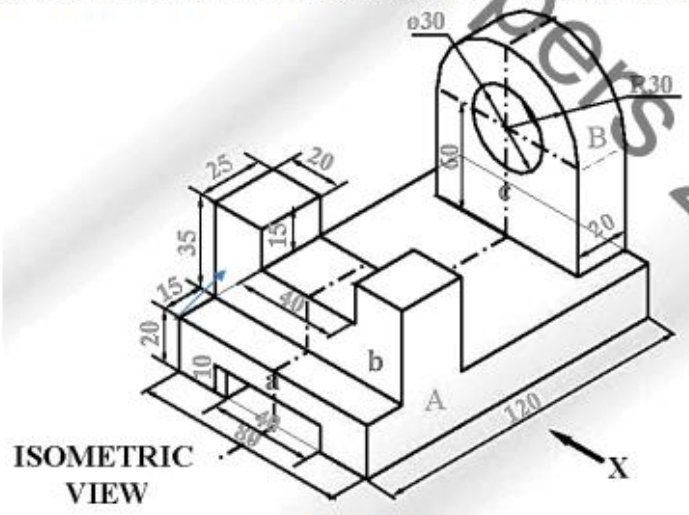


Figure.1

OR

11. The front and top views of an object are shown in Figure.2. Draw its isometric projection. [10]

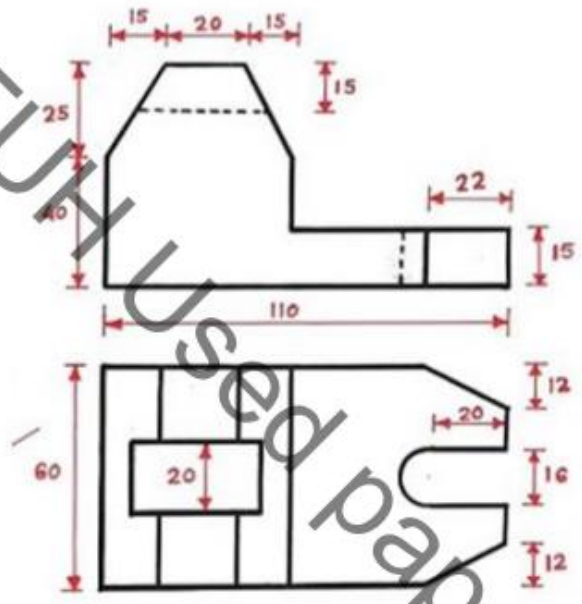


Figure.2

---ooOoo---

Code No: R201224 **R20** SET - 1

I B. Tech II Semester Regular Examinations, September- 2021

ENGINEERING DRAWING

(Comm. to Mining, Agri. E, Phar. E)

Time: 3 hours Max. Marks: 70

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

~~~~~~

UNIT-I

1. a) The Directrix of a hyperbola is 65mm from its focus. Draw the curve if the eccentricity is 3/2. Draw a normal and a tangent at a point on the curve, 75 mm from the Focus. (7M)
   b) Construct a scale of 1:8 to show decimeters and centimeters and to read up to 1 m. Show a length of 7.6 dm on it. (7M)

Or

2. a) Draw epicycloids if a circle of 40 mm diameter rolls outside another circle of 120 mm diameter for one revolution. (7M)
   b) Inscribe an ellipse in a parallelogram of sides 150 × 100 mm with an inclined angle of 120^0. (7M)

UNIT-II

3. a) Draw the projections of the following points, keeping the distance between the projectors as 25 mm on the same reference line: (5M)
   (i) Point 'A' on HP and 20 mm behind VP.
   (ii) Point 'B' 20 mm below HP and 30 mm behind VP.
   b) Draw the projections of a 60 mm long straight line, in the following positions. (9M)
   (i) Perpendicular to the HP, in the VP and its one end in the HP.
   (ii) Inclined at 45^0 to the VP, in the HP and its one end in the VP.

Or

4. A line AB, 80 mm long, makes an angle of 30^0 with the VP, and lies in a plane perpendicular to both the HP and VP. Its end A is in the HP, and the end B is in the VP. Draw its projections and show its traces. (14M)

UNIT-III

5. A semi-circular plane of diameter 70 mm has its straight edge on the HP and inclined at 45^0 to the VP. Draw the projection of the plane when its surface is inclined at 30^0 to the HP. (14M)

Or

6. PQRS is a rhombus having diagonal PR = 60 mm and QS = 40 mm 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 30^0 with the V.P. Draw its projections and determine inclination of the plane with the H.P. (14M)

UNIT-IV

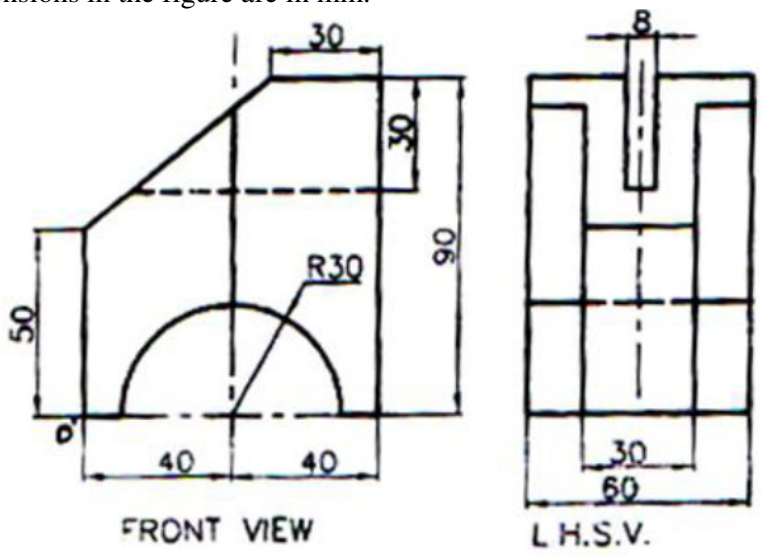
7. Draw the projections of a pentagonal prism of base side 25 mm and axis length 50 mm rests on the HP on one of its rectangular faces. The axis is inclined at 45^0 to the VP. (14M)

Or

8. A cone with 50 mm diameter and axis 65 mm has one of its generators in the VP and inclined at 45^0 to the HP. Draw the projections of the cone. (14M)
~~~~~~

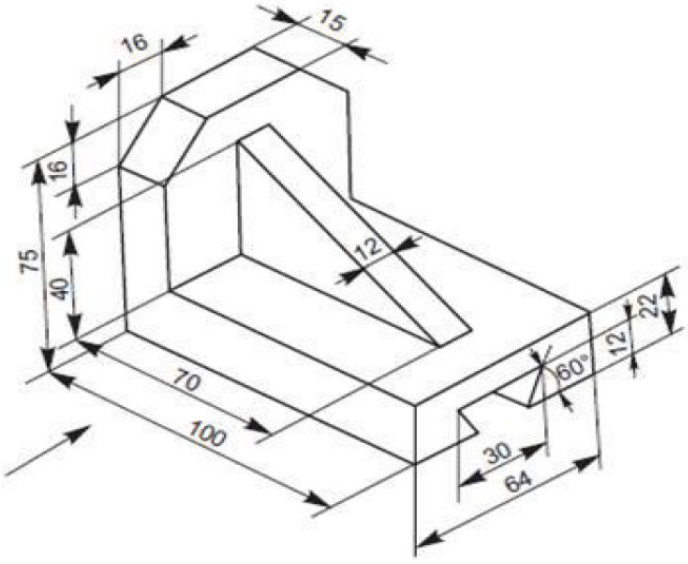
UNIT-V

9. Figure shows two views of an object. Draw the isometric view of the object. All dimensions in the figure are in mm. (14M)



Or

10. Draw the three views of the part shown in the figure below. All dimensions are in mm. (14M)



Code No: R201224 **R20** SET - 1

I B. Tech II Semester Regular/Supplementary Examinations, AUGUST- 2022

ENGINEERING DRAWING

(Com. to Mining, Agri. E, Pharm E)

Time: 3 hours Max. Marks: 70

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

~~~~~~

UNIT-I

1. a) Draw an ellipse having the major axis of 100 mm and the minor axis of 60 mm. (7M)

   b) The actual length of 500 m is represented by a line of 15 cm on a drawing. Construct a vernier scale to read up to 600 m. Mark on it a length of 568 m. (7M)

Or

2. Draw a hyperbola when the distance between its focus and directrix is 50 mm and eccentricity is 3/2. Also draw the tangent and normal at a point 25 mm from the directrix. (14M)

UNIT-II

3. The TV of a line CD measures 80 mm and makes an angle 55^0 with XY. End C is in VP and the HT of line is 25 mm above XY. The line is inclined at 30^0 to the HP. Draw the projections of line CD. Determine its true length, true inclination with VP and VT. (14M)

Or

4. a) Draw the projections of the following points on a common reference line. (7M)
   (a) P 35 mm behind the VP and 20 mm below the HP.
   (b) Q 40 mm infront the VP and 30 mm above the HP.
   (c) R 50 mm behind the VP and 15 mm above the HP.
   (d) S 40 mm below the HP and in the VP.
   (e) T 30 mm infront of the VP and 50 mm below the HP.

   b) Line AB is 55 mm long and it is 25^0 & 45^0 inclined to HP & VP respectively. End A is 15 mm above HP and 15 mm in front of VP. Draw projections. Line is in 1st quadrant. (7M)

UNIT-III

5. Semi-circular plate of 80 mm diameter has its straight edge on VP and inclined at 30° to HP, while the surface of the plate is inclined at 45° to VP. Draw the projections of the plate. (14M)

Or

6. A regular hexagon of 40mm has a corner in the HP. Its surface is inclined at 45^0 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.9 (14M)

UNIT-IV

7. Draw the projections of a cone, base 75 mm diameter and axis 100 mm long, lying on the ground on one of its generators with the axis parallel to the VP. Assuming the cone to be resting on its base on the ground, draw its projections. (14M)

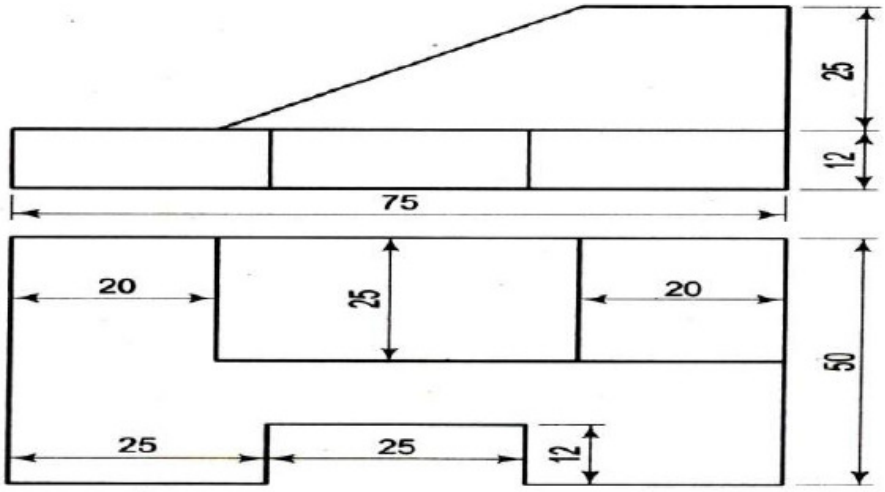
Or

|'''|'|'|''|''||'|||
~~~~~~

8. Draw the projections of hexagonal pyramid of base 25 mm and height 60 mm long, has an edge of its base on the ground. Its axis is inclined at 30^0 to the ground and parallel to the V.P. Draw its projections. (14M)

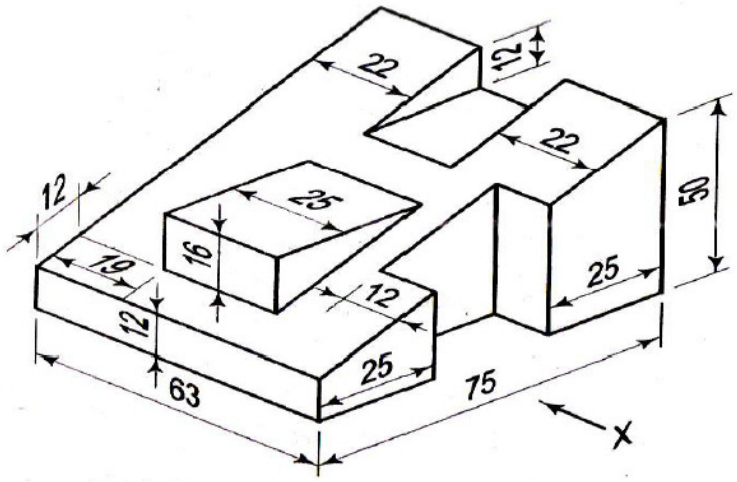
UNIT-V

9. Draw the isometric view of given casting as shown in figure below. All dimensions are in mm. (14M)



Or

10. Draw the a) Front view b) Side view from the left c) Top view as shown in figure below. All dimensions are in mm. (14M)



Code No: **R201224** **R20** **SET - 1**

I B. Tech II Semester Supplementary Examinations, January/February - 2023
ENGINEERING DRAWING

(Common to Mining Engineering, Agricultural Engineering, Pharm. E)

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 parabola with in a parallelogram of sides 110mm × 50mm. One of the included angles between the sides is 70^0. [7M]
   b) Draw a Regular/Supplementary/August pentagon on a circumscribing circle of 60 mm diameter. [7M]

(OR)

2. a) Construct an ellipse when a pair of conjugate diameters AB and CD is equal to 110mm and 50mm respectively. The angle between the conjugate diameters is 70^0. [7M]
   b) An area of 144 sq cm on a map represents an area of 36 sq km on the field. Find the RF of the scale for this map and draw a diagonal scale to show kilometres, hectometres and decametres and to measure up to 10 kilometres. Indicate on the scale a distance of 7 kilometres, 5 hectometres and 6 decametres. [7M]

UNIT - II

3. a) A line measuring 80mm long has one of its ends 60mm above H.P. and 20mm in front of V.P. The other end is 15mm above H.P. and in front of V.P. The front view of the line is 60mm long. Draw the top view. [7M]
   b) A line EF 40mm long is in the V.P. and inclined to H.P. The top view measures 30mm. The end E is 10mm above H.P. Draw the projections of the line. Determine its inclination with H.P. [7M]

(OR)

4. A line CD 80mm long is inclined at an angle of 30^0 to H.P. and 45^0 to V.P. The point C is 20mm above H.P. and 30mm in front of V.P. Draw the projections of the straight line. [14M]

UNIT - III

5. Draw the projections of a Regular/Supplementary/August hexagon of 25mm side, having one of its sides in the H.P. and inclined at 60^0 to the V.P, and its surface making an angle of 45^0 with the H.P. [14M]

(OR)

6. Draw the projections of a circle of 50mm diameter resting in the H.P. on a point A on the circumference its plane inclined at 45^0 to the H.P. and:
   (a) The top view of the diameter AB making 30^0angle with the V.P.
   (b) The diameter AB making 30^0 angle with the V.P. [14M]

UNIT - IV

7. A square pyramid, base 40mm side and axis 90mm long, has a triangular face on the ground and the vertical plane containing the axis makes an angle of 45^0 with the V.P. Draw its projections [14M]

(OR)

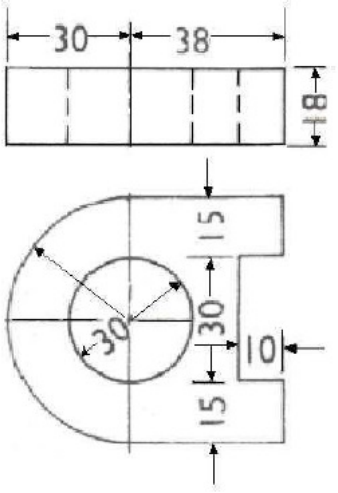
8. Draw the projections of a pentagonal prism, base 25mm side and axis 50mm long, resting on one of its rectangular faces on the H.P., with the axis inclined at 45^0 to the V.P. [14M]

|''|'||||''|''|||'|
~~~~~~

Code No: **R201224** **R20** **SET - 1**

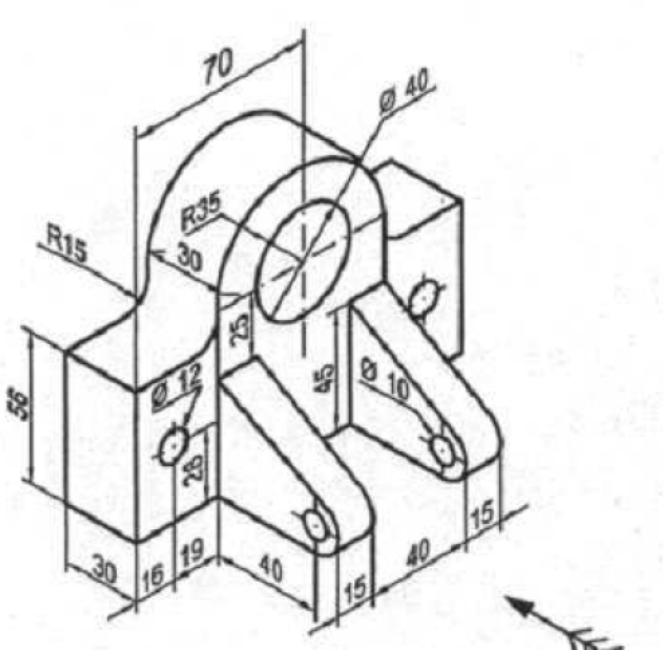
UNIT - V

9. Draw the isometric view of the block, two views of which are shown in figure below. (All dimensions are in mm). [14M]



(OR)

10. Draw the front view, top view and left side view of the object shown in figure below. All dimensions are in mm. [14M]



*****

Code No: **R201224** **R20** **SET - 1**

I B. Tech II Semester Regular/Supplementary Examinations, July/August-2023
ENGINEERING DRAWING
(Common to Mining, Agri. E, Phar.E)

Time: 3 hours Max. Marks: 70

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

~~~~~~

UNIT-I

1. A fixed point F is 7.5 cm from a fixed straight line. Draw the locus of a point P moving in such a way that its distance from the fixed straight line is 2/3 times its distance from F. Name the curve. Draw normal and tangent at a point 6 cm from F. [14M]

(OR)

2. Two fixed points A and B are 100 mm apart. Trace the complete path of a point P moving (in the same plane as that of A and B) in such a way that the sum of its distances from A and B is always equal to 125 mm. Name the curve. Draw another curve parallel to and 25 mm away from this curve. [14M]

UNIT-II

3. a) 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]

   b) Draw the projections of a line AB, 90 mm long, its midpoint M being 50 mm above the HP and 40 mm in front of the VP. The end A is 20 mm above the HP and 10 mm in front of the VP. [7M]

(OR)

4. A line AB of 70mm long has its end A at 10mm above H.P. and 15mm in front of V.P. Its front view and top view measure 50mm and 60mm respectively. Draw the Projections of the line and determine its inclinations with H.P. and V.P. [14M]

UNIT-III

5. A rectangle ABCD 60 mm × 40 mm is parallel to HP with one of its sides inclined at 30^0 to VP and the end of the side near to VP is 15 mm in front of the VP and 30 mm above the HP. Draw its projections. [14M]

(OR)

6. A regular pentagon of 30mm sides is resting on HP on one of its side while its opposite vertex is 30mm above HP. Draw the projections when the side in HP is 30^O inclined to VP [14M]

UNIT-IV

7. a) Draw the projections of a hexagonal prism of base 25mm and axis 60mm long, when it is resting on one of its corners of the base on H.P. The axis of the solid is inclined at 45^0 to H.P. [7M]

   b) A cube of 50mm long edges is resting on the H.P. with its Vertical faces equally inclined to the V.P. Draw its projections. [7M]

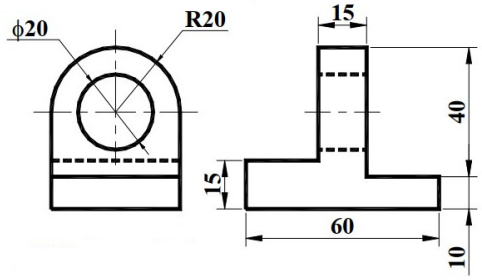
(OR)

8. A square pyramid, base 40mm side and axis 90mm long, has a triangular face on the ground and the vertical plane containing the axis makes an angle of 45^0 with the V.P. Draw its projections. [14M]
~~~~~~

Code No: **R201224** **R20** **SET - 1**

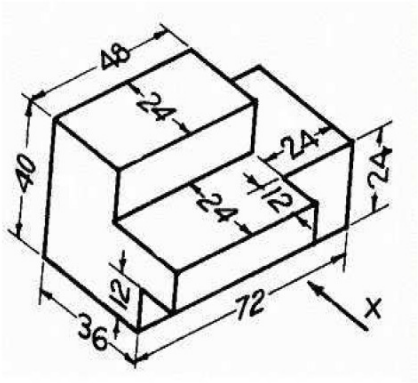
UNIT-V

9. Sketch the pictorial view for the below figure from the given orthographic views. [14M]



(OR)

10. Draw the elevation, plan, left and right views of the part shown in the figure below. [14M]
(All dimensions are in mm).



*****

Code No: R201224 **R20** SET - 1

I B. Tech II Semester Supplementary Examinations, March- 2022

ENGINEERING DRAWING

(Com. to Mining, Agri. E, Phar E)

Time: 3 hours Max. Marks: 70

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

~~~~~~

UNIT-I

1. a) A fixed point is 65mm from a fixed straight line. Draw the locus of a point P moving such a way that its distance from the fixed straight line is twice its distance from the fixed point. (7M)

   b) Construct a diagonal scale to read up to 0.1 mm, and mark on it a distance of 6.63 cm. Take the scale as 3**:**1. (7M)

Or

2. A circle of 50 mm diameter rolls along a line. A point on the circumference of the circle is in contact with the line in the beginning and after one complete revolution. Draw the cycloidal path of the point. Draw a tangent and normal at any point on the curve. (14M)

UNIT-II

3. A line AB measures 100 mm. The projectors through its VT and the end A are 40 mm apart. The point A is 30 mm below the HP and 20 mm behind the VP. The VT is 10mm above the HP. Draw the projections of the line and determine its HT, inclinations with the HP and VP. (14M)

Or

4. a) The FVs of two points P and Q coincide at 30 mm above XY. Their TVs are 30 mm below and10 mm above XY respectively. Draw the three views of each point and determine the distance between them. (7M)

   b) A line AC 90 mm long makes 30^0 with HP and 50^0 with VP, such that its midpoint B lies 50 mm above HP and 55 mm in front of VP. Draw the projections if the end A is nearer to HP, while the end C is nearer to VP. (7M)

UNIT-III

5. A regular pentagon ABCDE, of 30 mm sides, has its side AB in the V.P. and inclined at an angle of 30^0 to the H.P. The corner A is 15mm above H.P. and the corner D is 20 mm in front of V.P. Draw the projections of the plane and find its inclination with the V.P. (14M)

Or

6. A rectangular plane of sides 50 mm and 25 mm has shorter side on the HP. The surface of the plane is inclined at 60^0 to the HP and perpendicular to VP. Draw its projections. If the shorter edge also makes an angle of 45^0 with the VP, draw the projections. (14M)

UNIT-IV

7. A pentagonal prism of base side 30 mm and axis 60 mm has one of its rectangular faces on the H.P and the axis inclined at 60^0 to the V.P. Draw the projections. (14M)

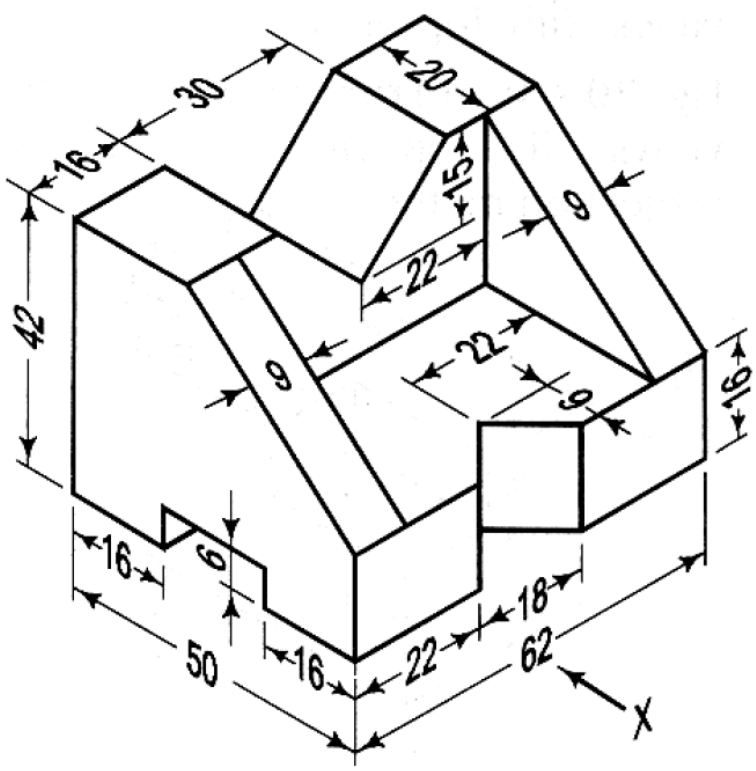
|'''|'|'|''|''||'|||
~~~~~~

Or

8. Draw the projections of a cylinder, base 30 mm diameter and axis 40 mm long, lying on the ground with its axis inclined at 30^0 to the V.P and parallel to the ground. (14M)

UNIT-V

9. Draw Front view, Top view and Side view of the given isometric view given in figure below according to first angle projection method. All dimensions are in mm. (14M)



Or

10. A sphere of radius 20 mm is kept on the top face of a square prism of side of base 40 mm and height 20 mm. The latter is placed on the top face of a cylinder of 65 mm diameter and 25 mm height. All the three solids have the common axis. Draw the isometric projection of combination of solids. (14M)