

13-5-19  
AN



(Regulation 2017)

Maximum : 100 marks

- Answer ALL questions.

$$(5 \times 20 = 100)$$

- 

Or

- (b) A point P moves in such a way that its distance from a fixed straight line is 9 units while its distance from a fixed point is always 7 units. Draw the curve by choosing at least 10 points. Assume that the distance between the fixed straight line is 30 mm from that the fixed point.
2. (a) The end P of a line PQ is 30 mm above HP and 35 mm in front of VP. The line is inclined at  $35^\circ$  to the HP. Its top view is 70 mm long and inclined at  $40^\circ$  to XY. Draw the projections of the straight line. Locate the traces. Find the true length and inclination of the line with the VP.
- Or
- (b) A hexagonal plate of side 20 mm rests on the HP on one of its sides inclined at  $45^\circ$  to the VP. The surface of the plate makes an angle of  $30^\circ$  with the HP. Draw the front and top views of the plate.
3. (a) A cylinder of diameter 30 mm and axis length 50 mm is resting on the HP on a point so that its axis is inclined at  $45^\circ$  to the HP and parallel to the VP. Draw its top and front views.
- Or
- (b) A square pyramid of base side 60 mm and altitude 100 mm lies on the HP on one of its triangular faces with its axis parallel to the VP. Draw its projections.
4. (a) A pentagonal pyramid of base side 20 mm and altitude 45 mm rests on its base on the HP with an edge of the base perpendicular to the VP. It is cut by a plane perpendicular to both the HP and VP. The cutting plane cuts the object at 8 mm from the axis in the top view. Draw the front, top and right end views of the pyramid.
- Or
- (b) A hexagonal prism of base edge 25 mm and height 60 mm rests on one of its ends on the HP with a vertical face parallel to the VP. A horizontal hole of diameter 36 mm is drilled centrally right through the prism with its axis perpendicular to the VP. Draw the development of the lateral surfaces of the prism with the hole.
5. (a) Draw the isometric view of a frustum of a cone of height 30 mm, base diameter 34 mm, top diameter 20 mm when it is centrally placed over a square slab of side 50 mm and thickness 10 mm.
- Or
- (b) A square prism of base  $25 \times 25$  mm and height 40 mm rests on the GP on one of its ends with a rectangular face receding away from the PP towards right making  $60^\circ$  with PP. The corner nearest to the PP is 40 mm to the left of the station point and 20 mm behind the PP. The station point is 60 mm above the GP and 50 mm in front of the PP. Draw the perspective view of the prism by visual ray method. Use the top view and the front view.

Question Paper Code : 54010

B.E./B.Tech. DEGREE EXAMINATION, JANUARY 2018

First Semester

Civil Engineering

GE 8152 – ENGINEERING GRAPHICS

(Common to all Branches)

(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

Answer any one question from each unit.

First angle projection to be followed.

(5×20=100 Marks)

1. a) A circle of diameter 50 mm rolls along the inside of another circle of diameter 200 mm without slipping. Draw the path traced by a point on the smaller circle. Draw a tangent and a normal at a point on the curve.

OR

- b) Make free-hand sketches of front, top and left side views of the object shown in figure 1.

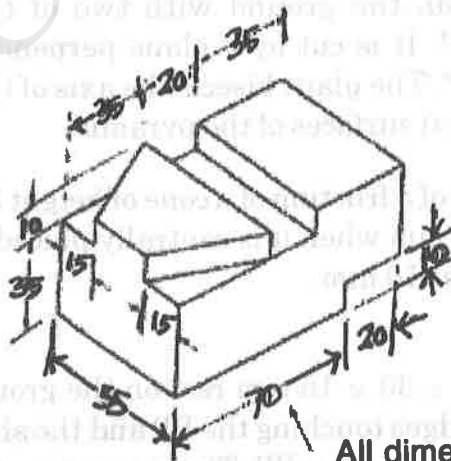


Figure -1

All dimensions are in mm



2. a) A straight line ST has its end S, 10 mm in front of the VP and nearer to it. The mid point m of the line is 50 mm in front of the VP and 40 mm above the HP. The front and top views measure 100 mm and 120 mm respectively. Draw the projections of the line. Also find its true length and true inclinations with the reference planes.

OR

- b) A hexagonal plate of side 20 mm rests on the HP on one of its sides inclined at  $45^\circ$  to the VP. The surface of the plate makes an angle of  $30^\circ$  with the HP. Draw the front and top views of the plate.
3. a) A hexagonal prism of base side 30 mm and axis length 60 mm rests on the HP on one of its base edges with its axis inclined at  $60^\circ$  to the HP and parallel to the VP. Draw its front and top views.

OR

- b) A pentagonal pyramid of base edge 25 mm and axis length 60 mm rest on one base side on HP such that the highest base corner is 20 mm above HP. Its axis is parallel to the VP. Draw its top and front views.
4. a) A right circular cone of base diameter 50 mm and axis length 60 mm rests on its base on the HP. It is cut by a plane perpendicular to the HP and inclined at  $60^\circ$  to the VP. The shortest distance between the cutting plane and the top view of the axis is 8 mm. Draw the top view, sectional front view and the true shape of the section.

OR

- b) A hexagonal pyramid of base of side 25 mm and altitude 50 mm is resting vertically on its base on the ground with two of the sides of the base perpendicular to the VP. It is cut by a plane perpendicular to the VP and inclined at  $40^\circ$  to the HP. The plane bisects the axis of the pyramid. Draw the development of the lateral surfaces of the pyramid.
5. a) Draw the isometric view of a frustum of a cone of height 30 mm, base diameter 34 mm, top diameter 20 mm when it is centrally placed over a square slab of side 50 mm and thickness 10 mm.

OR

- b) A rectangular Prism  $40 \times 30 \times 15$  mm rest on the ground on one of its ends with one of the longest edges touching the PP and the shortest edges receding to the left at an angle of  $40^\circ$  to the PP. The nearest vertical edge is 15 mm to the left of the station point which is at a distance of 55 mm in front of the PP and 30 mm above the ground. Draw the perspective view of the prism.



Reg. No. :

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**Question Paper Code : 25111**

B.E./B.Tech. DEGREE EXAMINATION, DECEMBER/JANUARY 2019.

First Semester

Civil Engineering

GE 8152 — ENGINEERING GRAPHICS

(Common to All Branches)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

(5 × 20 = 100)

1. (a) Draw locus of a point on the periphery of a circle having diameter of 50 mm, which rolls on straight line path. Name the curve and draw a tangent and normal to the curve at any point Q on it.

Or

- (b) Sketch by free hand the front view, the top view, and the right side view of the object shown in Figure 1. Assume proportional dimensions in mm.

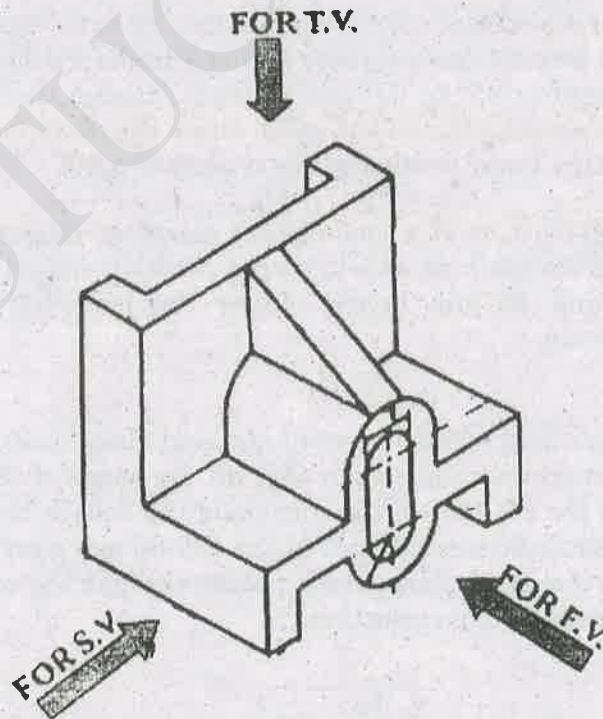


Figure 1

2. (a) A line a'b' is  $50^\circ$  inclined to xy and measures 55 mm long, while its top view is inclined at  $60^\circ$  to xy line. The end A of the line is 15 mm above HP and 20 mm in front of VP. Draw the projections of the line and find its true length and true inclinations with HP and VP. Also show its traces.

Or

- (b) A rectangular lamina  $40 \times 70$  mm size is standing on one of its corner with the sides equally inclined to HP. The surface of the lamina is inclined to VP at an angle of  $30^\circ$  to VP. The diagonal passing through the resting corner makes an angle of  $55^\circ$  with HP. Draw the projections of the rectangular lamina.
3. (a) A tetrahedron of 25 mm long edges is resting on one of its edges with a face containing that edge is perpendicular to HP and inclined at  $30^\circ$  to the V.P. Draw its projections.

Or

- (b) A hexagonal pyramid having a base with a 30 mm side and an 80 mm long axis, is freely suspended from one of the corners of the base. Draw its projections when its axis is parallel to the V.P.
4. (a) A right circular cone of base diameter 60 mm and height 75 mm is resting on its base on the HP. It is cut by a plane perpendicular to the VP and inclined at  $30^\circ$  to the HP bisecting the axis of the cone. Draw the sectional top view and true shape of the section when the top half of the sectioned solid is removed.

Or

- (b) A square prism of base edge 50 mm sides and axis 70 mm long is standing on its base with its faces equally inclined to the VP. It is cut by a section plane inclined at  $45^\circ$  to HP and passing through the intersection of the top surface and the face of the solid. Draw the development of the lateral surfaces of the lower portion of the truncated solid.
5. (a) An inverted frustum of a cone of base diameter 40 mm and top diameter 20 mm and 30 mm long axis is placed centrally over a cylinder of 70 mm diameter and 40 mm height. Draw the isometric projection of the combined solid.

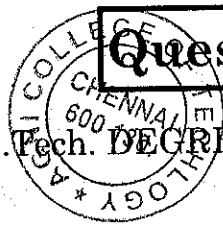
Or

- (b) A square pyramid of base edge 40 mm and altitude 50 mm, rests with its base on the ground plane such that all the edges of the base are equally inclined to the PP. One of the corners of the base is touching the PP. The station point is 60 mm in front of the PP, 80 mm above the ground plane and lies in a central plane which passes through the axis of the pyramid. Draw the perspective projection.



Reg. No. :

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**Question Paper Code : 90279**

**B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019**

**First Semester**

**Civil Engineering**

**GE 8152 – ENGINEERING GRAPHICS**

**(Common to all branches)**

**(Regulations 2017)**

**Time : Three Hours**

**Maximum : 100 Marks**

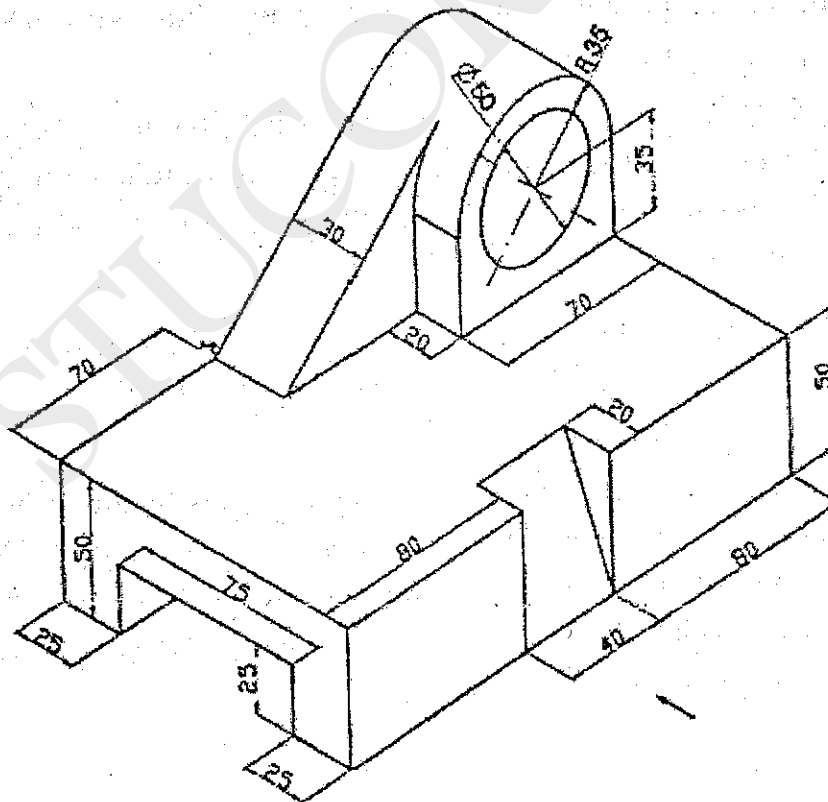
**Answer ALL questions.**

**(5×20=100 Marks)**

1. a) A fixed point is 50 mm from a fixed line. Draw the locus of a point moving in such a way that its distance from the fixed straight line is equal to its distance from the fixed point. Name the curve and draw a tangent and a normal at a point horizontal distance of 40 mm from the directrix. **(20)**

**(OR)**

- b) The pictorial view of an object is shown in Fig. 1. Draw the following views : **(20)**
- Elevation in the direction of arrow.
  - Top View and
  - Left Side View.



**Fig. 1**





2. a) A line PQ is inclined at  $35^\circ$  to VP has its ends 25 mm and 55 mm above the HP. The length of the front view is 60 mm and its VT is 15 mm above HP. Determine the true length of PQ, its inclination with HP and its HT. (20)
- (OR)
- b) A regular hexagon lamina of 25 mm side has its one of its edge on HP. The surface of the lamina is perpendicular to VP and inclined at  $40^\circ$  to HP. Draw the three views of the plane and locate the traces. (20)
3. a) A pentagonal pyramid of base side 25 mm and height 60 mm is resting on its base in HP with its axis perpendicular to HP and one of the base edges perpendicular to VP lying on its left. Draw its front view, top and right side views. (20)
- (OR)
- b) Draw the projections of a cone base 30 mm and axis 50 mm long resting on a point of its base circle in HP with the axis making an angle of  $45^\circ$  with HP and parallel to VP. (20)
4. a) A cube of side 35 mm is placed and cut by a plane in such a way that the true shape of the section is a regular hexagon. Draw the sectional front and top views of the cube and find the inclination of the section plane with the HP. (20)
- (OR)
- b) A vertical cylinder of diameter 40 mm and height 60 mm drilled by a hole of diameter 30 mm, such that the axis of the hole is perpendicular to VP, parallel to HP and bisecting the axis of the cylinder. Draw the lateral surface of development of the solid. (20)
5. a) A square pyramid of side 30 mm, axis length 50 mm is centrally placed on top of cube of side 50 mm. Draw the isometric view of solid. (20)
- (OR)
- b) A square prism of 30 mm base side and 50 mm axis height is lying on the ground on its base with a face parallel to and 15 mm behind PP. The station point is 40 mm in front of PP and 60 mm above GP and lies in a central plane passing through a point 25 mm to the right of the right end of the prism. Draw the prespective projection of the prism. (20)



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Reg. No. :

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**Question Paper Code : 71940**

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

First Semester

Mechanical Engineering

GE 6152 — ENGINEERING GRAPHICS

(Common to Mechanical Engineering (Sandwich), Aeronautical Engineering, Agriculture Engineering, Automobile Engineering, Biomedical Engineering, Civil Engineering, Computer Science and Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Electronics and Instrumentation Engineering, Environmental Engineering, Geoinformatics Engineering, Industrial Engineering, Industrial Engineering and Management, Instrumentation and Control Engineering, Manufacturing Engineering, Marine Engineering, Materials Science and Engineering, Mechanical and Automation Engineering, Mechatronics Engineering, Medical Electronics Engineering, Metallurgical Engineering, Petrochemical Engineering, Production Engineering, Robotics and Automation Engineering, Biotechnology, Chemical Engineering, Chemical and Electrochemical Engineering, Fashion Technology, Food Technology, Handloom and Textile Technology, Industrial Bio Technology, Information Technology, Leather Technology, Petrochemical Technology, Petroleum Engineering, Pharmaceutical Technology, Plastic Technology, Polymer Technology, Rubber and Plastics Technology, Textile Chemistry, Textile Technology, Textile Technology (Fashion Technology), Textile Technology (Textile Chemistry))

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

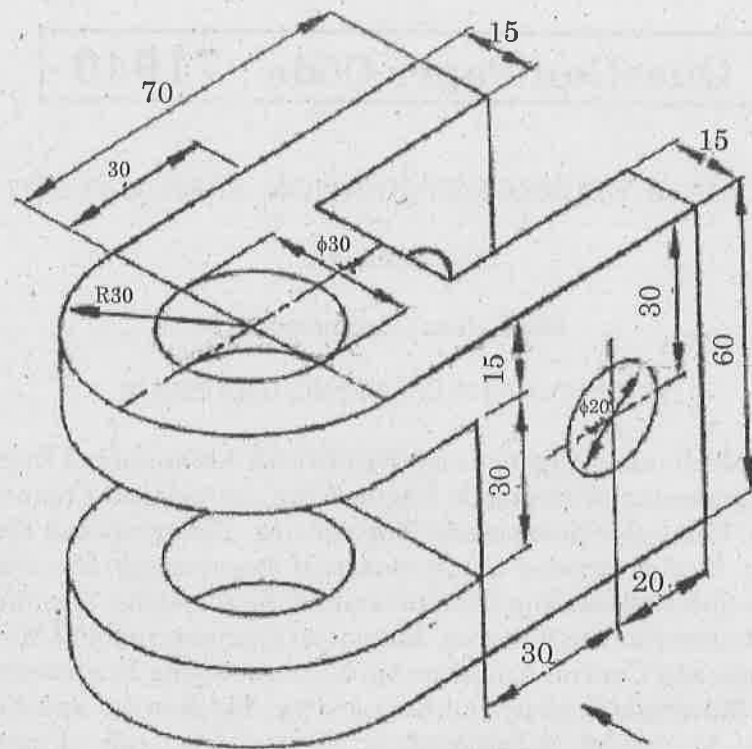
Answer ALL questions.

(5 × 20 = 100)

1. (a) (i) The distance between two stations is 100 km and on a road map it is shown by 30 cm. Draw a diagonal scale and indicate 46.8 km on it. (10)
- (ii) Construct a hyperbola with the distance between the focus and directrix as 50 mm and eccentricity as  $3/2$ . Also draw the tangent and normal to the curve at a point, 25 mm from the axis. (10)

Or

- (b) Draw the front view, top view and left side view of the object shown in figure. (20)



All Dimensions are in mm

2. (a) The top view of a 80 mm long line AB measures 65 mm, while the length of its front view is 55 mm. Its one end A in the H.P. and 12 mm in front of the V.P. Draw the projections of AB and determine its inclinations with the H.P. and V.P. (20)

Or

- (b) A pentagonal lamina of 30 mm side rests on the H.P. on one of its corners with its surface inclined at  $30^\circ$  to the H.P. Draw its projections when the side opposite to the resting corner is  $45^\circ$  inclined to V.P. (20)

3. (a) A hexagonal pyramid with 30 mm base side 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. (20)

Or

- (b) A hexagonal prism of 30 mm base side and axis 65 mm long, has an edge of its base in the V.P. such that the axis is inclined at  $30^\circ$  to the V.P. and parallel to the H.P. Draw its projections. (20)

4. (a) A square pyramid of 40 mm base side and 65 mm long axis has its base on the H.P. and all the edges of base are equally inclined to the V.P. It is cut by a section plane perpendicular to the V.P. and inclined at  $45^\circ$  to the H.P. and bisecting the axis. Draw the sectional top view and true shape of the section. (20)

Or

- (b) A cone with a 50 mm base diameter and 60 mm long axis, rests with its base on the H.P. Draw the development of its lateral surface when it is cut by an auxiliary inclined plane which bisecting the axis and inclined  $60^\circ$  to the H.P. (20)

5. (a) A sphere of radius 50 mm is kept centrally over a frustum of square pyramid of side 120 mm at the bottom and 80 mm at the top and height 100 mm. Draw the isometric view of the assembly. (20)

Or

- (b) A square prism of base side 40 mm and height 70 mm rests with its base on the ground such that one of its rectangular faces is parallel and 10 mm behind picture plane. The station point is 30 mm in front of picture plane, 80 mm above the ground plane and lies in a central plane 40 mm to the right of the corner of the prism. Draw the perspective projection of the prism. (20)





Reg. No. :

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**Question Paper Code : 41179**

**B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018**

**First Semester**

**Mechanical Engineering**

**GE 6152 – ENGINEERING GRAPHICS**

(Common to Mechanical Engineering (Sandwich) Aeronautical Engineering/  
Agriculture Engineering/Automobile Engineering/Biomedical Engineering/  
Civil Engineering/Computer Science and Engineering/Electrical and Electronics  
Engineering/Electronics and Communication Engineering/Electronics and  
Instrumentation Engineering/Environmental Engineering/Geoinformatics  
Engineering/Industrial Engineering/ Industrial Engineering and Management/  
Instrumentation and Control Engineering/Manufacturing Engineering/Marine  
Engineering/Materials Science and Engineering/Mechanical and Automation  
Engineering/Mechatronics Engineering/Medical Electronics/Metallurgical  
Engineering/Petrochemical Engineering/Production Engineering/Robotics  
and Automation Engineering/B.E./B.Tech. (Common to all branches except  
Marine Engg.) Bio Technology/B.Tech. Chemical Engineering/Chemical and  
Electrochemical Engineering/Fashion Technology/Food Technology/Handloom  
and Textile Technology/Industrial Bio Technology/B.Tech. Information Technology/  
Leather Technology/Petrochemical Technology /Petroleum Engineering/  
Pharmaceutical Technology/B.Tech. Plastic Technology/Polymer Technology/  
Rubber and Plastics Technology/Textile Chemistry/Textile Technology/Textile  
Technology (Fashion Technology)/Textile Technology (Textile Chemistry)  
(Regulations 2013)

**Time : Three Hours**

**Maximum : 100 Marks**

**Answer ALL questions.**

**(5×20=100 Marks)**

1. a) A fixed point is 75 mm from a fixed straight line. Draw the locus of a point 'P' moving such a way that its distance from the fixed point is twice its distance from the fixed straight line. Name the curve. Draw a tangent and normal at any point on the curve.

(OR)





- b) Draw by free hand the top view, front view and right side view of the object shown in figure 1.

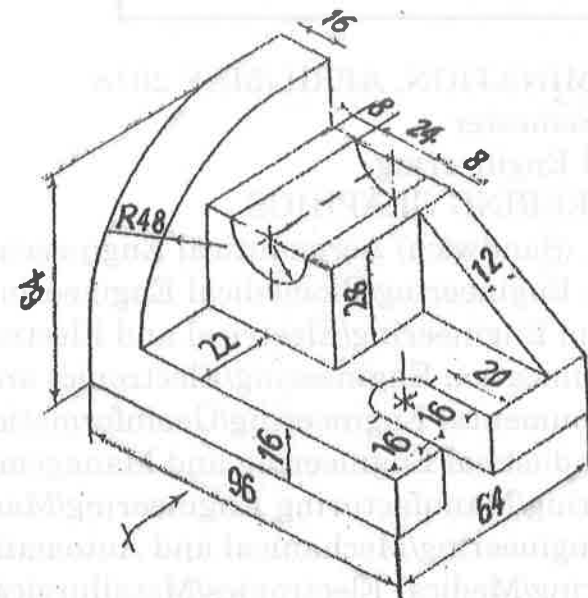


figure 1

2. a) A line AB is in the first quadrant. The top view of the line measures 60 mm and inclined to the reference line by  $60^\circ$ . The end point A is 15 mm above the HP and 30 mm in front of the VP. Draw the projection of the line when it is inclined at  $45^\circ$  to the HP. Find the true length and inclination of the line with the VP and locate the traces.  
(OR)
- b) A rectangular lamina of sides 75 mm  $\times$  40 mm is resting on the VP on one of its longer sides. The surface of the lamina is inclined  $45^\circ$  to the VP and the side resting on the VP is inclined  $45^\circ$  to the HP. Draw the projections of the lamina.
3. a) A pentagonal prism of base side 30 mm and axis length 60 mm is resting on the HP on one of its rectangular faces, with the axis inclined  $30^\circ$  to the VP. Draw the projections of the prism.  
(OR)
- b) Draw the projections of a cube having side length 30 mm resting on the HP on one of its corners, with the solid diagonal through the resting corner is perpendicular to the HP and parallel to the VP.
4. a) A cylinder of base diameter 50 mm and height 60 mm is resting on the HP on its base. It is cut by a plane perpendicular to the VP and inclined to the HP, such that the true shape of the cut section is an ellipse with major axis 60 mm. The cutting plane also bisects the axis of the cylinder. Draw the sectional top view, sectional front view and true shape of the section. Find the inclination of the cutting plane with respect to the HP.

(OR)

- b) A cone of base 60 mm and height 80 mm is resting on its base on the HP. A cutting plane perpendicular to both the HP and VP cuts the cone a distance 15 mm to the left of the axis. Another cutting plane parallel to the HP and perpendicular to the VP cuts the cone 20 mm from the apex of the cone. Draw the development of remaining portion of the cone.

5. a) Draw the isometric view of a frustum of a hexagonal pyramid with side of base 40 mm and side of top 30 mm. The height of the frustum is 50 mm.

(OR)

- b) Draw the perspective view of a square pyramid with base side 30 mm and axis height 45 mm. The nearest edge of the base is parallel to and 20 mm behind the picture plane. The station point is situated at a distance of 70 mm in front of the picture plane and 40 mm to the right of the axis of the pyramid and 60 mm above the ground.

Reg. No. :

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**Question Paper Code : 53125**

B.E./B.Tech. DEGREE EXAMINATIONS APRIL/MAY 2019.

First Semester

Mechanical Engineering

GE 6152 – ENGINEERING GRAPHICS

(Common to all branches)

Time : Three hours

Maximum : 100 marks

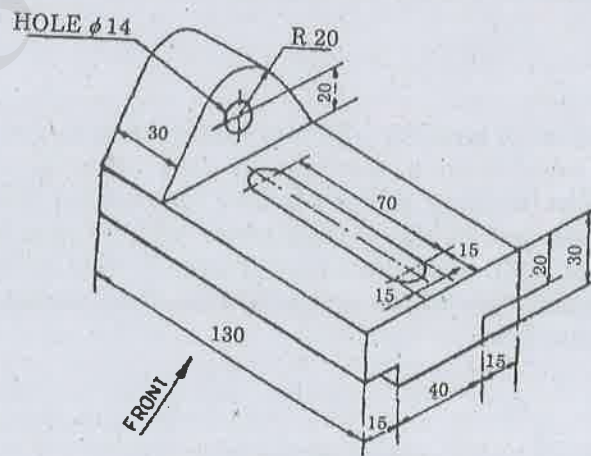
Answer ALL questions.

(5 × 20 = 100)

1. (a) (i) A String of length 220 mm is wound round a circle of radius 25 mm. Draw the path traced by the end of the string. Also draw a tangent and normal to a point on the involute. (10)
- (ii) Construct a vernier scale of RF = 1/30 to read centimeters upto 5 meters and on it show lengths of 3.72 m and 2.86 m. (10)

Or

- (b) Sketch by free hand the top view, front view and any one side view of the object shown, all dimensions are in mm.



2. (a) The end P of a line PQ, 70 mm long is 15 mm above the HP and 20 mm in front of the VP. Q is 40 mm above the HP. The top view of the line is inclined at  $45^\circ$  to the VP. Draw the projections of the line and find its true inclination with the VP and the HP.

Or

- (b) A rectangular plate measuring  $70 \times 40$  mm has one of its shorter edges in the VP inclined at  $40^\circ$  to the HP. Draw its top view if its front view is a square of side 40 mm. Draw its projections and also find the true inclination of the plate with the VP.

3. (a) A hexagonal pyramid with 30 mm base side 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. (20)

Or

- (b) A hexagonal prism of 30 mm base side and axis 65 mm long, has an edge of its base in the V.P. such that the axis is inclined at  $30^\circ$  to the V.P. and parallel to the H.P. Draw its projections. (20)

4. (a) A cube of side 30 mm rests on the HP on its end with the vertical faces equally inclined to the VP. It is cut by a plane perpendicular to the VP and inclined at  $30^\circ$  to the HP meeting the axis at 25 mm above the base. Draw its front view, sectional top view and the true shape of the section.

Or

- (b) A circular hole of diameter 30 mm is drilled through a vertical cylinder of diameter 50 mm and height 65 mm. The axis of the hole is perpendicular to the VP and meets the axis of the cylinder at right angles at a height of 30 mm above the base. Draw the development of the lateral surface of the cylinder.

5. (a) Draw the isometric view of a frustum of a hexagonal pyramid when it is resting on its base on the HP with two sides of the base parallel to the VP. The side of base is 20 mm and top 8 mm. The height of the frustum is 55 mm.

Or

- (b) A square prism of base  $25 \times 25$  mm and height 40 mm rests on the GP on one of its ends with a rectangular face receding away from the PP towards right making  $60^\circ$  with PP. The corner nearest to the PP is 40 mm to the left of the station point and 20 mm behind the PP. The Station point is 60 mm above the GP and 50 mm in front of the PP. Draw the perspective view of the prism by visual ray method. Use the top view and the front view.



Question Paper Code : 80503

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

## First Semester

## Mechanical Engineering

GE 6152 — ENGINEERING GRAPHICS

(Common to all Branches)

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

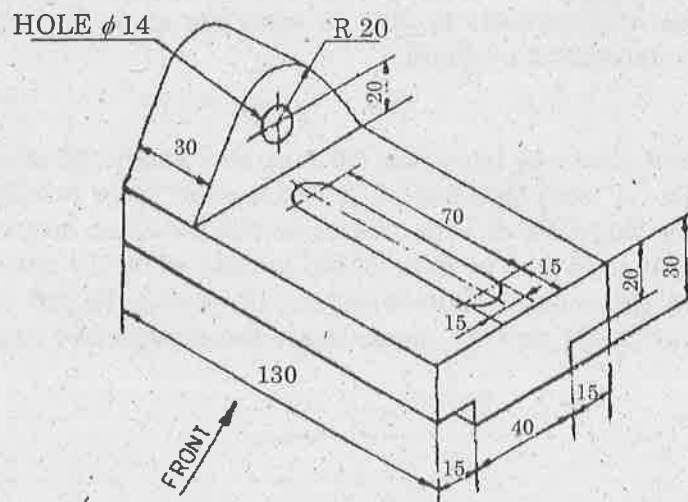
Answer ALL questions.

(5 × 20 = 100 marks)

1. (a) (i) A String of length 220 mm is wound round a circle of radius 25 mm. Draw the path traced by the end of the string. Also draw a tangent and normal to a point on the involute. (10)
- (ii) Construct a vernier scale of RF =  $\frac{1}{30}$  to read centimeters upto 5 meters and on it show lengths of 3.72 m and 2.86 m. (10)

Or

- (b) Sketch by free hand the top view, front view and any one side views of the object shown, all dimensions are in mm.



2. (a) The distance between the projectors of two points A and B is 70 mm. Point A is 10 mm above the H.P. and 15 mm in front of the V.P., Point B is 50 mm above the H.P. and 40 mm in front of the V.P. Find the shortest distance between A and B by the rotating line method. Measure the true inclinations of the line AB with the V.P and the H.P. Also mark the traces.

Or

- (b) A pentagon of 35 mm side is resting on one of its corners on the VP. The edge opposite to that corner makes an angle of  $30^\circ$  to the HP. The surface of the pentagon is inclined at  $40^\circ$  to the VP. Draw the projections.
3. (a) A hexagonal pyramid of base side 30 mm and axis height 65 mm has one of the corners of its base in the VP and the axis is inclined at  $45^\circ$  to the VP and parallel to HP. Draw the front view and top view of the solid.

Or

- (b) Draw the projections of a pentagonal pyramid of base side 25 mm and altitude 60 mm when it rests on the ground on one of its base edges with the axis inclined at  $30^\circ$  to the ground and parallel to the VP. Use change of reference line method.
4. (a) A cone of base diameter 50 mm and height 65 mm is resting on HP on its base. A Section plane cuts the cone in such a way that it is perpendicular HP and  $35^\circ$  inclined to VP. Also the section plane is passing through the cone at a distance of 12 mm in front of the axis. Draw its sectional front view and true shape of the section.

Or

- (b) A cylinder of base 60 mm diameter and height of 75 mm rests with its base on HP. A section plane perpendicular to VP and inclined at  $30^\circ$  to HP bisects the axis of the cylinder. Draw the development of its lateral surface.
5. (a) A pentagonal pyramid base 25 mm and height 65 mm stands with its base on HP and edge of the base parallel to VP and nearer to it. A section plane cuts the pyramid at  $30^\circ$  inclined to HP and passes through a point on the axis at a distance of 20 mm from the apex. Draw the isometric view of the truncated pyramid.

Or

- (b) A hexagonal prism of base side 25 mm and height 50 mm lies with its base on the GP such that one of its rectangular faces is inclined at  $30^\circ$  to the PP and the vertical edge nearer to the PP is 15 mm behind it. The station point is 45 mm in front of the picture plane 70 mm above the GP and lies in the central plane which is 15 mm to the left of the vertical edge nearer to the picture plane Draw the perspective projection of the prism.

Reg. No. :

[illegible]

**Question Paper Code : 91660**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

## First Semester

## Civil Engineering

**GE 6152 – ENGINEERING GRAPHICS**

(Common to all Branches)

(Regulations 2013)

**Time : Three Hours**

Maximum : 100 Marks

Answer ALL questions.

**(5×20=100 Marks)**

1. a) Draw an ellipse when the eccentricity is  $\frac{2}{3}$  and the distance of the focus from the directrix is equal to 50 mm. Also draw a normal and tangent to a point on the ellipse which is at a distance of 70 mm from the directrix. (20)

(OR)

- b) Draw the following views of the component shown in Fig. 1 by free hand sketching : (20)
- i) Front view
  - ii) Top view and
  - iii) Right side view

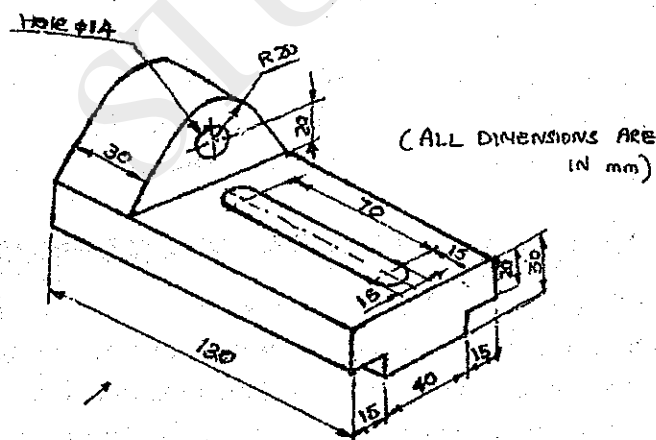


Fig. 1





2. a) The top view of a 80 mm long line AB measures 65 mm, while the length of its front view is 55 mm. Its one end A in the H.P. and 12 mm in front of the V.P. Draw the projections of AB and determine its inclinations with the H.P. and V.P.

(OR)

(20)

- b) A pentagonal lamina of 30 mm side rests on the H.P. on one of its corners with its surface inclined at  $30^\circ$  to the H.P. Draw its projections when the side opposite to the resting corner is  $45^\circ$  inclined to V.P.

(20)

3. a) A square prism of base side 35 mm and axis length 60 mm lies on the HP on one of its longer edges with its faces equally inclined to the HP. Draw its projections when its axis is inclined at  $30^\circ$  to the VP. Use change of position method.

(OR)

(20)

- b) Draw the projections of a hexagonal prism of base side 20 mm and axis length 50 mm when it rests on the ground on one of its base edges and the axis inclined at  $35^\circ$  to the ground and parallel to the VP. Use change of reference line method.

(20)

4. a) A cone of base diameter 50 mm and height 65 mm is resting on HP on its base. A section plane cuts the cone in such a way that it is perpendicular HP and  $35^\circ$  inclined to VP. Also the section plane is passing through the cone at a distance of 12 mm in front of the axis. Draw its sectional front view and true shape of the section.

(OR)

(20)

- b) A cylinder of base 60 mm diameter and height of 75 mm rests with its base on HP. A section plane perpendicular to VP and inclined at  $30^\circ$  to HP bisects the axis of the cylinder. Draw the development of its lateral surface.

(20)

5. a) Draw the isometric projection of a sphere of diameter 16 mm kept centrally over a frustum of a square pyramid of height 25 mm. The frustum has a base of side 35 mm and top of side 20 mm. Take isometric lengths from an isometric scale drawn.

(OR)

(20)

- b) Draw the perspective view of a pentagonal prism of base side 20 mm and height 40 mm when it rests on its base on the ground plane with one of its rectangular faces parallel to and 20 mm behind the picture plane. The station point is 45 mm in front of the PP and 60 mm above the GP. The observer is 20 mm to the left of the axis. Draw the perspective by visual ray method. Use the top view and front view.

(20)