Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 37003

B.E./B.Tech. DEGREE EXAMINATION, JANUARY 2014.

First Semester

Civil Engineering

GE 6152 – ENGINEERING GRAPHICS

(Common to all Branches)

(Regulation 2013)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

$(5 \times 20 = 100)$

1. (a) The distance between Chennai and Madurai is 400 km. It is represented by a distance of 8 cm on a railway map. Find the R.F. and construct a diagonal scale to read kilometres. Show on it the distances of 543 km, 212 km and 408 km.

Or

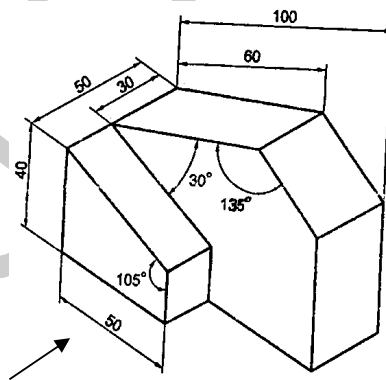   (b) Sketch free hand the top, front and right side views of the object shown in Fig. 1 (b).

Fig. 1 (b)

2. (a) One end P of a line PQ, 55 mm long is 35 mm in front of the VP and 25 mm above the HP. The line is inclined at 40° to the HP and 30° to the VP. Draw the projections of PQ.

Or

(b) A hexagonal plate of side 20 mm rests on the HP on one of its sides inclined at 45° to the VP. The surface of the plate makes an angle of 30° with the HP. Draw the front and top views of the plate.

3. (a) A hexagonal pyramid of base edge 40 mm and altitude 80 mm rests on one of its base edges on the HP with its axis inclined at 30° to the HP and parallel to the VP. Draw its top and front views using change of position method.

Or

(b) Draw the projections of a pentagonal pyramid of base side 30 mm and altitude 60 mm when it rests on the ground on one of its base edges with the axis inclined at 30° to the ground and parallel to the VP. Use change of reference line method.

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° 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 hold 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 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

(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.

—————————

Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 37004

B.E./B.Tech. DEGREE EXAMINATION, JANUARY 2014.

First Semester

Civil Engineering

GE 6152 — ENGINEERING GRAPHICS
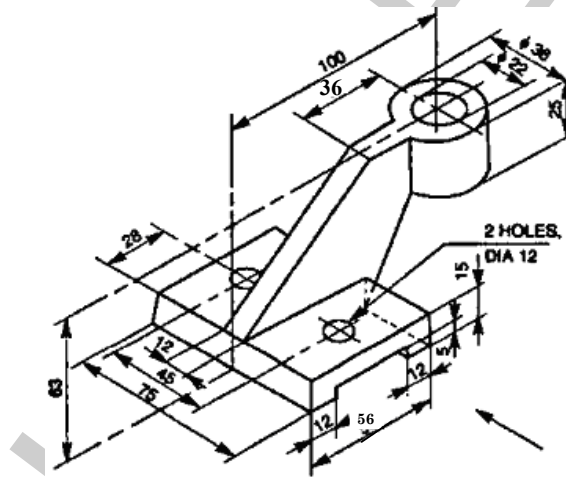
(Common to all branches)

(Regulation 2013)

Time : Three hours   Maximum : 100 marks

Answer ALL questions

$(5 \times 20 = 100)$

1. (a) Draw the front view, top view and left side view for a machine component as shown in figure.

Or

    (b) The eccentricity of the curve is 5/3. The distance from the focus to the vertex of a curve is 30 mm. Draw the curve and also draw tangent and normal for any one point on the circumference of the curve.

2. (a) A straight line AB 50 mm long has its end A 10 mm above HP and end B 50 mm in front of VP. Draw the projection of the line AB if it is inclined at 30° to HP and 45° to VP.

Or

    (b) A circular lamina of 60 mm diameter is resting on VP on one of its circumference point such that the surface is 40° inclined to VP. Draw the projections of a lamina if the diagonal passing through the point on which it is resting is making 50° with HP.

3. (a) A pentagonal prism of 25 mm side and height 65 mm is resting on HP on one of its rectangular faces such that its axis is parallel to HP and 40° inclined to VP. Draw its projections.

Or

   (b) A square pyramid of base side 40 mm and height 60 mm is resting on HP on one of its triangular faces such that the axis is inclined to HP and parallel to VP. Draw its projection using auxiliary plane method.

4. (a) A cone of base diameter 60 mm and height 70 mm is resting on HP on its base. A section plane cuts the cone in such a way that it is perpendicular to HP and 30° inclined to VP. Also the section plane is passing through the cone at a distance of 10 mm in front of the axis. Draw its sectional front view and true shape of the section.

Or

   (b) A hexagonal pyramid of base side 30 mm and height 60 mm rests vertically on its base on the ground with two of its base sides parallel to VP. It is cut by a sectional plane inclined at 30° to HP and perpendicular to VP and meeting the axis at the midpoint. Draw the development of the lateral surfaces of a truncated pyramid.

5. (a) A cylinder of diameter 60 mm and height 60 mm when it is resting on one of its ends on the HP. It is cut by a sectional plane perpendicular to VP and inclined at 45° to the HP. The plane passes through the point on the axis which is located at 15 mm from the top of the cylinder. Draw the isometric view of a truncated cylinder.

Or

   (b) A hexagonal prism of base side 20 mm and height 50 mm rests on the ground plane on one of its rectangular faces with its axis inclined at 30° to the picture plane. One corner of a prism is touching the picture plane. The station point is 60 mm in front of the PP and lies in a central plane that bisects the axis. The station point is 40 mm above the ground plane. Draw the perspective of a prism using vanishing point method.

———————————

2   **37004**

Question Paper Code : **57410**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

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 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.

OR

(b)   Draw the following views of the component shown in Fig. 1 by free hand sketching :

(i)   Front view
(ii)   Top view and
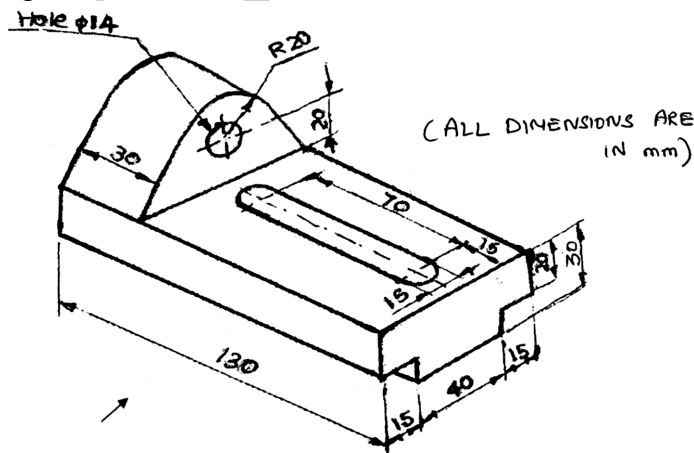(iii) Right side view

Fig. 1

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° 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 × 40 mm has one of its shorter edges in the VP inclined at 40° 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 pentagonal pyramid of base side 30 mm and axis length 60 mm is resting on HP on one of its base corner such that the slant edge containing the resting corner is perpendicular to HP and parallel to VP. Draw its projections.

OR

(b) Draw the projections of a cylinder of diameter 50 mm and axis length 70 mm when it is lying on the ground with its axis inclined at 45° to the VP and parallel to the ground.

4. (a) A cone of base diameter 40 mm and axis length 50 mm is resting on HP on its base with its axis perpendicular to HP. It is cut by a plane inclined at 45° to HP and perpendicular to VP and bisecting the axis of the cone. Draw the sectional plan, elevation and true shape of the section.

OR

(b) A hexagonal prism of base side 30 mm and axis length 65 mm is resting on HP on its base with two of its rectangular face is parallel to VP. A circular hole of diameter 40 mm is drilled completely through the prism such that the axis of the hole is perpendicular to VP and bisects the axis of the prism. Draw the development of the lateral surface of the prism showing the shape of the holes formed on it.

5. (a) A cylinder of 50 mm diameter and 60 mm height stands on HP. A section plane perpendicular to VP inclined at 55° to HP cuts the cylinder and passing through a point on the axis at a height of 45 mm above the base. Draw the isometric projection of the truncated portion of the cylinder such that the cut surface is clearly visible to the observer.

OR

(b) A square pyramid, side of base 40 mm and height 60 mm rests with its base on the ground such that one of its base side is parallel to and 15 mm behind the picture plane. The station point is 90 mm in front of PP, 80 mm above the ground plane and lies in a central plane 40 mm to the right of the centre of the pyramid. Draw the perspective projection of the square pyramid.

_____

Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

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)
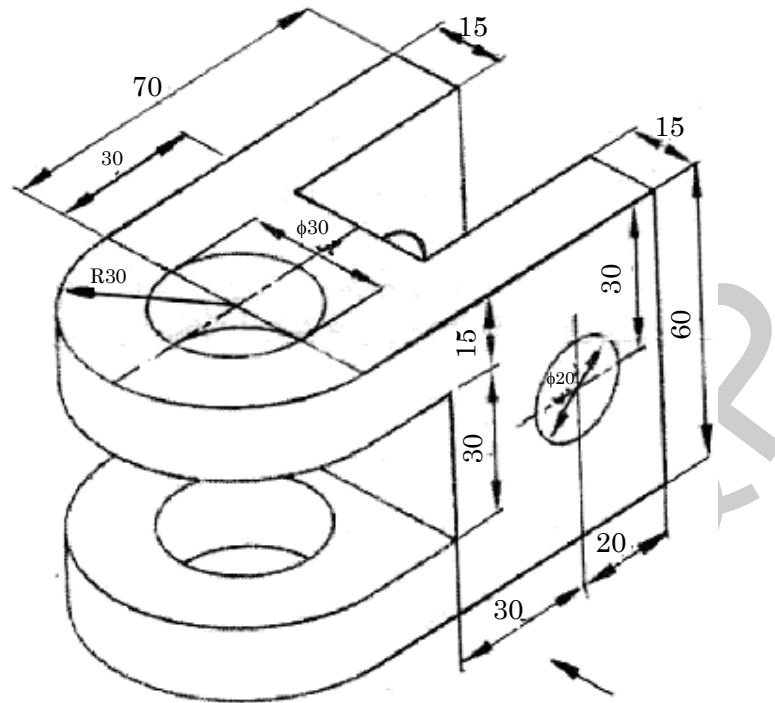
All Dimensions are in mm

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° to the H.P. Draw its projections when the side opposite to the resting corner is 45° 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° 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° 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° 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. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 77158

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2015.

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)

1. (a) Draw the involute of a circle of diameter 40 mm. Also draw a tangent and normal to the curve at any point on the curve.

Or

   (b) Sketch free-hand the top, front and right side views of the object shown in Fig. 1(b)
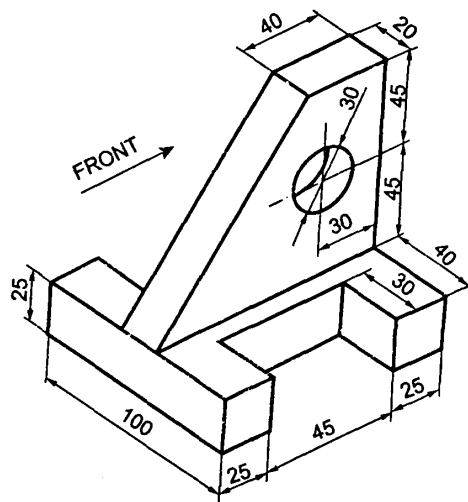

Fig.1 (b)

2. (a) A line NS, 80 mm long has its end N, 10 mm above the HP and 15 mm in front of the VP. The other end S is 65 mm above the HP and 50 mm in front of the VP. Draw the projections of the line and find its true inclinations with the HP and VP.

Or

(b) A rectangular plate measuring 55×30 mm is resting on its shorter side on the HP inclined at 30° to the VP. Its surface is inclined at 60° to the HP. Draw its projections.

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° to the VP. Use change of position method.

Or

(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° to the ground and parallel to the VP. Use change of reference line method.

4. (a) A square pyramid of base side 25 mm and altitude 40 mm rests on the HP on its base with the base edges equally inclined to the VP. It is cut by a plane perpendicular to the VP and inclined at 30° to the HP meeting the axis at 21 mm above the HP. Draw the sectional top view and the true shape of the section.

Or

(b) A cylinder of diameter 40 mm and height 50 mm is resting vertically on one of its end on the HP. It is cut by a plane perpendicular to the VP and inclined at 30° to the HP. The plane meets the axis at a point 30 mm from the base. Draw the development of the lateral surface of the lower portion of the truncated 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 25×25 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° 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.

———————

Reg. No. :

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 = 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.
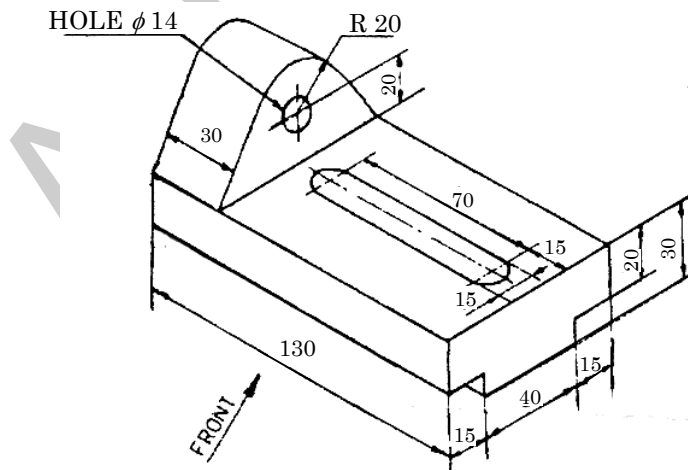
2. (a) The distance between the projectors of two points A and B is 70 mm. Point A is 10 mm above the H.P. and 15 mm in front of the V.P., Point B is 50 mm above the H.P. and 40 mm in front of the V.P. Find the shortest distance between A and B by the rotating line method. Measure the true inclinations 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° to the HP. The surface of the pentagon is inclined at 40° 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° 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° 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° 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° 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° 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° 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.

————————————

2   **80503**

Reg. No. :

Question Paper Code : 80504

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

First Semester

Civil Engineering

GE 6152 — ENGINEERING GRAPHICS

(Common to all branches)

(Regulations 2013)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

$(5 \times 20 = 100)$

1. (a) An inelastic string of 150 mm long has its one end attached to the circumference of a circular disc of 40 mm diameter. Draw the curve traced out by the other end of the string when it is completely wound around the disc keeping the string always tight Name the curve obtained. Draw the tangent and normal to the curve at a point distant 100 mm from the centre of the disc.

Or

   (b) Draw the elevation, plan and left side view of the solid shown below.
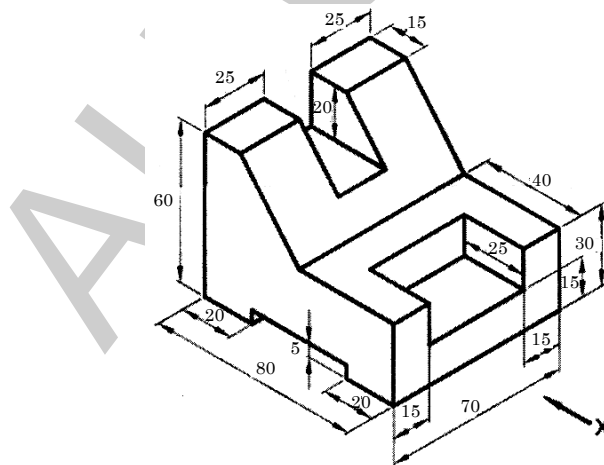
(All dimensions are in mm)

2. (a) A room is 4.8 m × 4.2 m × 3.6 m high. Determine graphically, the distance between a top corner and the bottom corner diagonally opposite to it.

Or

(b) An equilateral triangle *ABC* of side 70 mm is so placed that the side *AB* is parallel to *HP* and inclined at 40° to VP. The difference in height between *C* and *A* is 30 mm. Draw the projections of the triangle.

3. (a) A square prism of 40 mm and base side 60 mm long axis is kept on the *VP* on a corner of its base such that the longer edge containing that corner (on the HP) makes an angle of 30° to the *VP*. Draw the projection.

Or

(b) A cylindrical disc of 60 mm diameter and 20 mm thickness has a central coaxial square hole with 40 mm long diagonals. Draw the projections of the disc when the flat faces of the disc are vertical and inclined at 45° to the *VP* and the faces of the hole are equally inclined to the *HP*.

4. (a) Draw the development of lateral surface of a hexagonal pyramid with a 40 mm base side and a 60 mm long axis, which is resting on its base in the *HP*. such that an edge of the base is perpendicular to *V.P*, when an auxiliary inclined plane whose *V.T*. makes an angle 60° with *H.P*., bisects the axis.

Or

(b) A cone, having a 60 mm base diameter and a 70 mm long axis, is resting on its base on the ground. It is cut by a plane such that the true shape of the section is a rectangular hyperbola with a 40 mm base and seen in the front view. Draw the sectional front view and find the distance of the section plane from the axis of the cone.

5. (a) A square pyramid rests centrally over a cylindrical block. Draw the isometric projection of the arrangement. Consider the pyramid has a base with 25 mm side and 40 mm long axis whereas the cylindrical block has a base with 50 mm diameter and 20 mm thickness.

Or

(b) A cube of 25 mm side is placed vertically with one of its edges on the picture plane and the top square end face touching an auxiliary ground plane at a height of 45 mm above the horizon plane. The vertical edge formed by the two adjacent rectangular faces which are inclined at 45° to the picture plane, touches the picture plane. Draw the perspective view of the cube if the station point is 70 mm in front of the picture plane and lies in the central plane which is 30 mm to the right side of the centre of the cube.

———————————