Code.No: 09A11291 | R09 | SET-1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
I B.TECH – REGULAR EXAMINATIONS JUNE - 2010
ENGINEERING DRAWING
(COMMON TO IT, BIO)

Time: 3hours **Max.Marks:75**

Answer any FIVE questions
All questions carry equal marks
- - -

1(a) Draw a Vernier scale of 1:72 to read inches and long enough to measure 12 yards. Show the following distances on it:
(i) 1 yard 1 foot and 1 inch,
(ii) 7 yards 2 feet and 9 inches, and
(iii) 10 yards 10 inches.

(b) Draw the path traced out by a point on the circumference of a circle but opposite to the contact point. The circle rolls without slipping vertically downwards for the distance equal to its perimeter. The diameter of the circle is 40 mm. Name the curve. [15]

2. The end A of a line AB is in H.P and 25 mm behind V.P. The end B is in the V.P. and 50 mm above H.P. The distance between the end projectors is 75 mm. Draw the projections of AB and determine its true length. [15]

3. An isosceles triangular plane ABC with a 70 mm base and altitude 80 mm has its base in the H.P. and inclined at 45^0 to the V.P. The corners A and C are in the V.P. Draw its projections and determine the inclination of the plane with H.P. [15]

4. A cylinder has its axis horizontal and inclined at 60° to the V.P. An AVP cuts it such that the true shape of the section is an ellipse with a major axis of 100 mm and a minor axis of 65 mm. Draw the top view, sectional front view, and true shape of the section. The length of the cylinder is 105 mm. [15]

5. A vertical cone having an 80 mm base diameter and a 100 mm long axis is penetrated by a horizontal cylinder with a 45 mm diameter, the axis of which is 30 mm above the base of the cone, parallel to the VP and 5 mm away from the axis of the cone. Draw the three views showing the curves of intersection. [15]

6. A sphere with a 50 mm diameter rests centrally over a cube with a 60 mm side. Draw its isometric projection. [15]

7. Draw the front view, top view and side view of the object whose isometric view is shown in the Figure 1 below (All dimensions are in mm). [15]

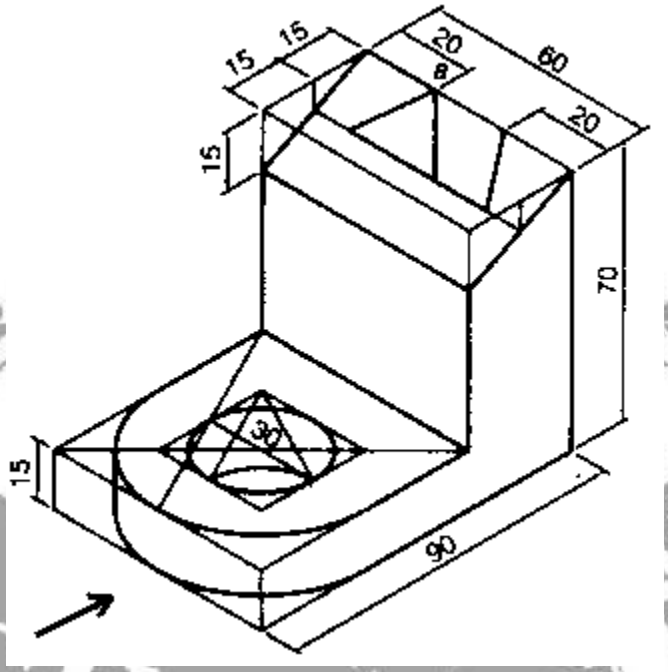

Figure 1

8. Draw the perspective view of a pentagonal plane with a 30 mm long side perpendicular to the PP. It is placed on GP with its centre 50 mm behind PP. The station point is 50 mm in front of the PP, 65 mm above GP, and lies in a CP which is at a distance of 50 mm to the right of the centre of the pentagon. [15]

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Code.No: 09A11291 | R09 | SET-2

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
I B.TECH – REGULAR EXAMINATIONS JUNE - 2010
ENGINEERING DRAWING
(COMMON TO IT, BIO)

Time: 3hours **Max.Marks:75**

Answer any FIVE questions
All questions carry equal marks
- - -

1(a) Construct a diagonal scale of RF =1/6250 to read up to 1 kilometer and to read metres on it. Show a length of 653 metres on it.

(b) Draw a circle of 40 mm diameter. The diameter AB is vertical with end A at top. Trace the curve generated by the end A when the circle rolls without slipping on a horizontal line for three-fourth rotation and then on the vertical line for its next half rotation. Name the curve traced by end A. [15]

2. The end A of an 80 mm long line AB is 20 mm above the H.P. and B is 15 mm in front of the V.P. The line is inclined at 30^0 to the H.P. and its top view makes 60^0 with the V.P. Draw its projections and find its inclination with the V.P. [15]

3. A square pyramid, with a base having a 50 mm side and a 60 mm long axis, has one its triangular face on the H.P. and a slant edge containing that face is parallel to the V.P. Draw its projections. [15]

4. A cylinder with a 50 mm base diameter and a 70 mm long axis is resting on its base in the H.P. It is cut by an auxiliary inclined plane whose V.T. is inclined at 30^0 with the H.P. and passes through top end of one of the extreme generators. Draw the development of the lateral surface of the retained solid. [15]

5. A triangular prism, having base with a 60 mm side and a 100 mm long axis, is resting on its base on the H.P. with a nearer face parallel to the V.P. It is penetrated by a cylinder with a 50 mm diameter and a 90 mm long axis. The axis of the cylinder is parallel to both the reference planes and 15 mm away from the axis of the prism towards the observer. Draw the projections of the combination and show the curves of intersection. [15]

6. Draw the isometric projection of a frustum of a sphere with a 60 mm diameter, frustum circle with a 40 mm diameter, resting centrally on a cube with a 50 mm side such that the circle of the frustum is horizontal and does not touch the cube. [15]

7. Draw the front view, top view and side view of the object whose isometric view is shown in the Figure 2 below (All dimensions are in mm). [15]

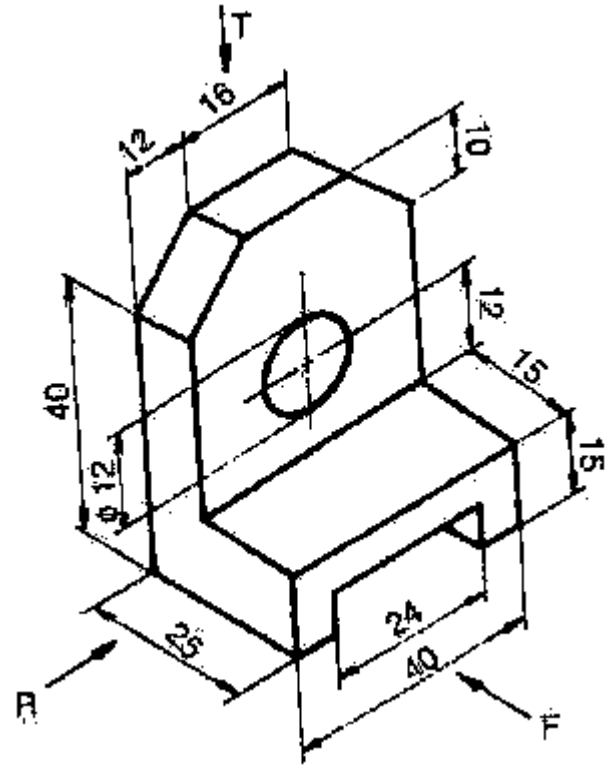

Figure 2

8. Draw the perspective view of a hexagonal prism having a base with a 40 mm side and a 60 mm long axis, resting on its base in the GP with a side of base parallel to and 10 mm behind the PP. The station point is 50 mm in front of the PP, 75 mm above GP, and lies in a CP which is at a distance of 50 mm towards the right of the axis. [15]

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Code.No: 09A11291 | R09 | SET-3

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
I B.TECH – REGULAR EXAMINATIONS JUNE - 2010
ENGINEERING DRAWING
(COMMON TO IT, BIO)

Time: 3hours **Max.Marks:75**

Answer any FIVE questions
All questions carry equal marks
- - -

1(a) Calculate the RF of a scale which measures 2.5 inches to a mile. Draw a comparative scale of kilometers to read up to 10 km. 1 mile=1.61 km.

(b) Trace the locus of the point on the circumference of the rolling circle of 40 mm diameter rolling on a circle of same diameter for one complete revolution .Name the curve. [15]

2. A 75 mm long line AB has its end A 15 mm above the H.P. and 30 mm in front of the V.P. The front and top views make 45^0 and 60^0 respectively with the reference line. Draw its projections and determine its true inclinations with the reference planes. [15]

3. A hexagonal plane with 35 mm side is resting on a side on the H.P., and inclined at 45^0 to the V.P. The surface of the plane is inclined at 30^0 to the H.P. Draw its projections using auxiliary plane method. [15]

4. A cone with a 60 mm base diameter and a 70 mm axis is resting on its base in the H.P. A section plane parallel to both the H.P. and V.P. cuts the cone at a distance of 12 mm from the axis. Draw the development of the retained cone. [15]

5. A cylinder resting on its base on the H.P. is penetrated by another cylinder with their axes bisecting at right angles. Draw the projections of the combination and show the curves of intersection. Consider the vertical cylinder having a 60 mm base diameter while the penetrating cylinder has a 50 mm base diameter. [15]

6. A hexagonal prism having base with a 30 mm side and a 70 mm long axis is resting on its base on the H.P. with a side of base parallel to the V.P. It is cut by an A.I.P. making 45^0 with the H.P. and bisecting the axis. Draw its isometric projection. [15]

7. Draw the front view, top view and side view of the object whose isometric view is shown in the Figure 3 below (All dimensions are in mm). [15]

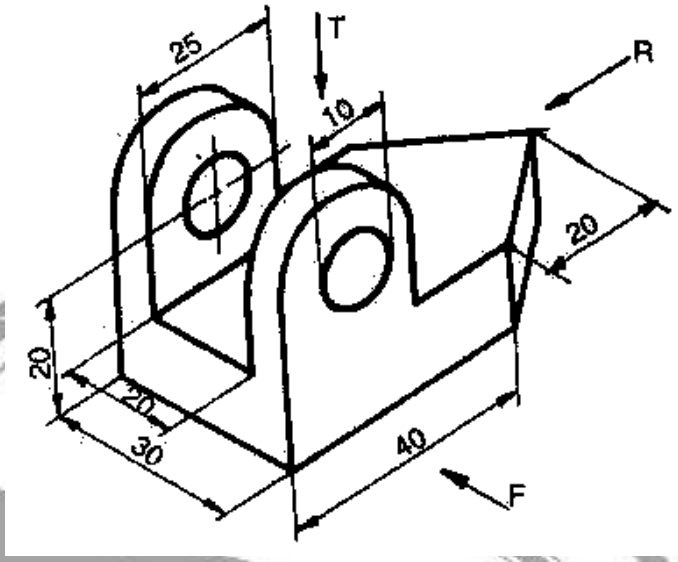

Figure 3

8. Draw the perspective view of a square pyramid having base with a 40 mm side and a 60 mm long axis, resting on its base in the GP with its axis at a distance of 40 mm behind the PP and all the edges of the base equally inclined to it. The station point is 50 mm in front of the PP, 75 mm above GP, and lies in a CP which is at a distance of 50 mm towards the right of the axis. [15]

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Code.No: 09A11291 | R09 | SET-4

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
I B.TECH – REGULAR EXAMINATIONS JUNE - 2010
ENGINEERING DRAWING
(COMMON TO IT, BIO)

Time: 3hours **Max.Marks:75**

Answer any FIVE questions
All questions carry equal marks
- - -

1(a) Draw comparative scales of RF = 1/485000 to read up to 80 km and 80 versts. 1 verst =1.067 km.

(b) An inelastic string of 120 mm length has its one end attached to the circumference of a circular disc with a 50 mm diameter. Draw the curve traced out by the other end of the string when it is completely wound round the disc keeping the string always taut. Draw the tangent and normal to the curve at a point 70 mm from the centre of the circular disc. Name the curve. [15]

2. The end A of an 80 mm long line is 20 mm below the H.P. and 30 mm behind the V.P. It is inclined at 60^0 to the H.P. and 30^0 to the V.P. Draw its projections if the other end lies in the first quadrant. [15]

3. A hexagonal prism, having a base with a 30 mm side and a 70 mm long axis, has an edge of the base parallel to the H.P. and inclined at 45^0 to the V.P. Draw its projections when its axis makes 60^0 with the H.P. [15]

4. A cone with a base diameter of 75 mm and a slant height of 75 mm is resting on a point on the circumference of the base on the H.P. The axis of the cone is inclined at 45^0 to the H.P. and parallel to the V.P. The cone is cut by a section plane whose HT passes through the midpoint of the axis and is seen parallel to an extreme generator in the top view. Draw the top view, sectional front view and true shape of the section of the cone. Assume that the apex of the cone is removed. [15]

5. A cone with an 80 mm base diameter and a 100 mm long axis rests on its base on the H.P. It is penetrated by a cylinder with a 50 mm base diameter, the axis of which is parallel to both the principal planes and meets the axis of the cone at a distance of 30 mm above the base. The two axes are 10 mm apart. Draw the projections of the combination and show the curves of intersection. [15]

6. A cube with a 60 mm side has square holes of 30 mm side, cut through from all the six faces. The sides of the square holes are parallel to the edges of the cube. Draw the isometric view of the cube. [15]

7. Draw the front view, top view and side view of the object whose isometric view is shown in the Figure 4 below (All dimensions are in mm). [15]

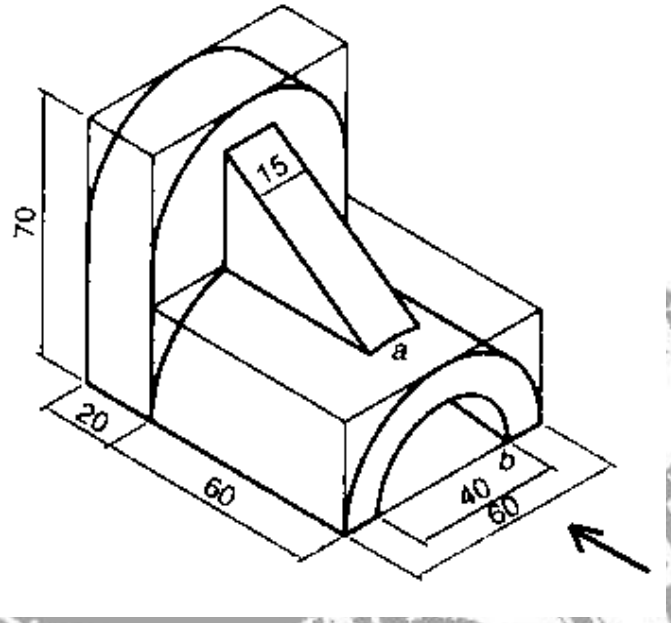

Figure 4

8. A hexagonal prism having 30 mm base side and 70 mm long axis is resting on its face in the GP with the axis inclined at 30^0 to the PP. The station point is 90 mm in front of the PP, 100 mm above GP, and lies in a CP which is at a distance of 70 mm rightwards to the corner nearer to the PP. Draw the perspective view when the corner nearer the observer touches the PP. [15]

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