Code.No: 09A10591 | R09 | SET-1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
I B.TECH – REGULAR EXAMINATIONS MAY - 2010
ENGINEERING DRAWING
(COMMON TO CSE, MEP)

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

Answer any FIVE questions
All questions carry equal marks

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1.a) Construct a hypocycloid when the diameters of the rolling circle and directing circle are 40 mm and 180 mm respectively. Draw also a normal and tangent at a point 120 mm from the centre of the directing circle.

b) Construct 25° and 55° angles by using scale of chords. [8+7]

2. An observer on the top of a tower 12 m high observes the angles of depression of two objects P and Q on the plane below to be 15° and 40° the direction of P being east and the direction of Q being south. Find the distance between P and Q. What is the inclination of a line to the ground which connects the mid point of P and Q to the top of the tower? [15]

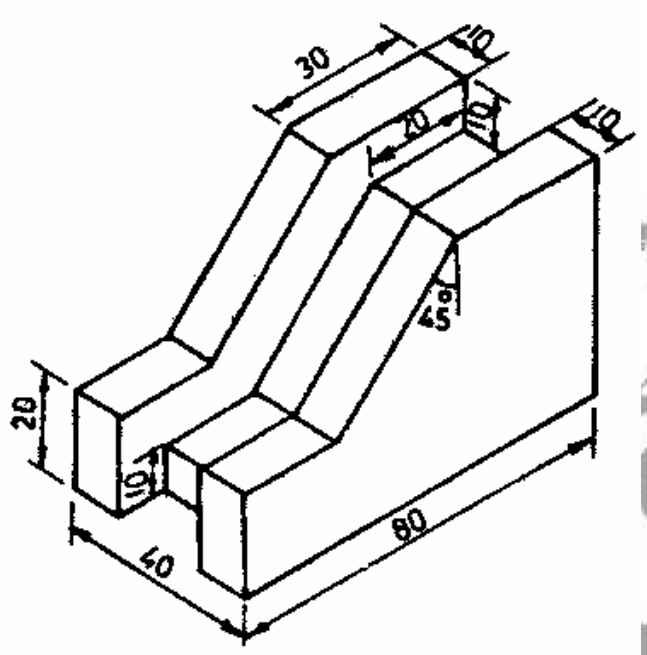
3. The altitude of a regular pentagonal pyramid is 75 mm long. The distance between the centre of the base to one of its corners is 30 mm. The apex of the pyramid is touching the HP, the VP and the right profile plane. One of the triangular faces is facing the ground. The axis is inclined at 45° to the VP and 60° to the ground. Draw the projections of the solid. [15]

4. A cone of base diameter 50 mm and height 70 mm is resting on its base on the ground. A square hole of 15 mm sides passes through the object. The axis of the hole and the cone intersect and are at right angles to each other. One of the shorter edges of the hole is parallel to and 10 mm above the base. Draw the development of the surface of the object. [15]

5. A triangular prism of edge of base 30 mm has its axis parallel to the HP and inclined at 60° to the VP. This prism interpenetrates a vertical cylinder of base diameter 60 mm. The axes of the objects intersect each other and one of the faces on the prism is perpendicular to the HP. Draw the curves of intersection. [15]

6. A pentagonal prism of base edge 30mm and 50mm long rests on its longer edge on the ground with the face opposite to this edge parallel to the ground. A cube of 25mm edge rests on this face on one of its faces. Two adjacent base edges of the cube make equal inclinations to one of the longer edges of the face parallel to the ground. A sphere 30mm diameter rests centrally on the top of the cube. Draw the isometric projections of the arrangement of the solids. [15]

7. Draw the front, top and both side views of the isometric projection given in figure. All dimensions are in mm. [15]



8. A cone of base diameter 50mm and height 70mm is resting on a point on the circumference of the base. The axis is parallel to both the HP and the VP. One of the points on the base is touching the PP. The station point is 50mm to the right of the centre of the axis of the object. The station point is 60mm from the PP and 80mm above the ground. Draw the perspective projection of the object. [15]

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Code.No: 09A10591 | R09 | SET-2

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
I B.TECH – REGULAR EXAMINATIONS MAY - 2010
ENGINEERING DRAWING
(COMMON TO CSE, MEP)

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

Answer any FIVE questions
All questions carry equal marks

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1.a) A circle of 35mm diameter rolls along a straight line without slipping. Draw a curve traced out by a point P on the circumference for one complete revolution of the circle. Name the curve and draw a tangent to the curve at a distance 25 mm from the straight line.

b) Construct a diagonal scale to read up to 1/100 of kilometers having given the value of R.F. = 1/50,000 and to measure up to 8 kilometers. Indicate on the scale, a distance of 6.76 kilometers. [8+7]

2. The HT and VT and the end A of line coincides and lie on XY. The distance between the view from above and the view from the front of the end B of the line is 60 mm. The line is equally inclined to the VP and the HP. The distance between the projectors as measured parallel to XY is 40 mm. Draw the projections and find the TL of the line. [15]

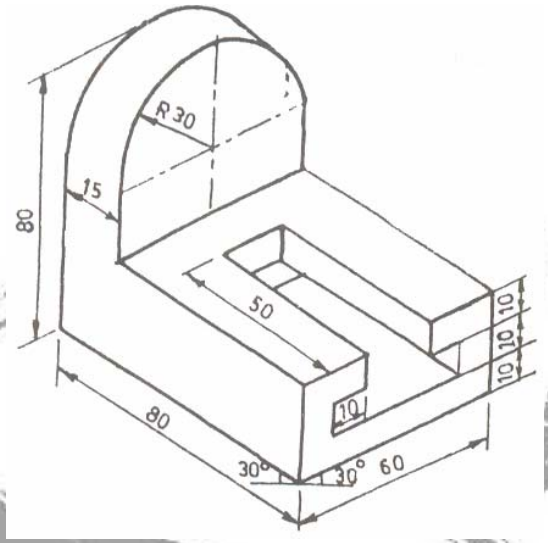
3. The base edge of a regular pentagonal pyramid measures 30 mm and the height of the pyramid is 60 mm. It is standing on its base on the ground with an edge of the base parallel to the VP. A corner of the base is nearer to the VP than the parallel edge. Draw the projections. Draw an auxiliary view from above on a plane which is inclined at 60° to the XY line. [15]

4. A pentagonal pyramid of base edge 25 mm and height 50 mm rests on its base on the ground with one of its base edges being perpendicular to the VP. A Circular hole of diameter 30 mm is made in the pyramid whose axis is perpendicular to the VP and 20 mm above the base of the pyramid. The axis of the hole intersects the axis of the pyramid at right angles to it. Draw the development of the surface of the pyramid. [15]

5. A cone penetrates a vertical cylinder of base diameter 60 mm and height 80 mm. The cone has its apex touching the ground and axis parallel to the VP. Its base has a diameter of 120 mm and height of 80 mm. The distance between the axes of the objects is 30 mm and the plane joining the axes of the objects is parallel to the VP. Draw the views of the objects showing the curves of interpenetration. [15]

6. A right circular cone of base dia, 40mm and height 60mm is resting on one of the points on the circumference of the base circle on the ground with the axis making 30° to the ground .The axis is parallel to the VP. The object is cut by a section plane parallel to the HP and perpendicular to the VP. The section plane bisects the axis. Draw the isometric projection of the object. [15]

7. Draw the front, top and both side views of the isometric projection given in figure. All dimensions are in mm. [15]



8. A hexagonal prism of base edge 30mm and 70mm long is resting on one of its rectangular faces on the ground with the hexagonal face touching the PP. The station point is 60 mm to the right of the axis of the object; 70mm away from the PP. The top most rectangular face of the object touches the horizon plane. Draw the perspective view of the object. [15]

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Code.No: 09A10591 | R09 | SET-3

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
I B.TECH – REGULAR EXAMINATIONS MAY - 2010
ENGINEERING DRAWING
(COMMON TO CSE, MEP)

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

Answer any FIVE questions
All questions carry equal marks

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1.a) A circle of 40mm diameter rolls along a straight line without slipping. Draw a curve traced out by a point P on the circumference for one complete revolution of the circle. Name the curve and draw a tangent to the curve at a distance 35 mm from the straight line.

b) Construct a diagonal scale of R.F. = 1/50,000 to show single metres and long enough to measure up to 500 metres. On the scale, indicate a distance of 467 metres. [8+7]

2. A straight line AB of length 100 mm makes 60^0 with HP and 30^0 with V.P A is 10 mm above HP and 20 mm in front of V.P. Both A and B are in same quadrant. Draw the front and top views of the line and locate H.T and V.T. [15]

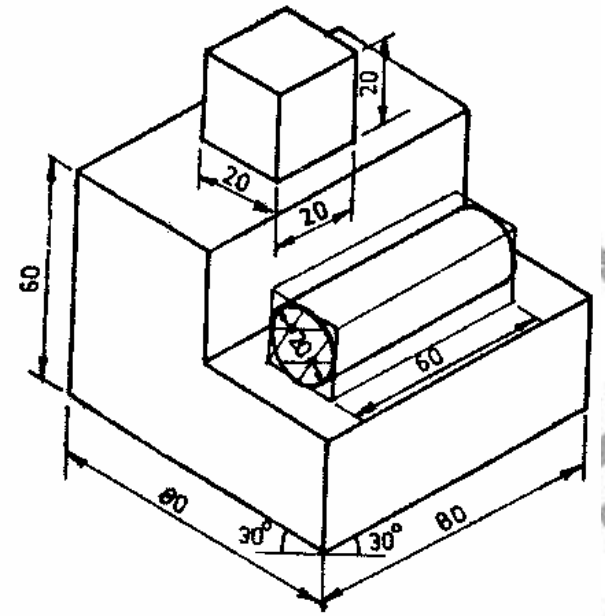
3. A right circular cone of base 50 mm diameter is situated such that the axis appears to be perpendicular to XY both in the HP and the VP. The axis measures 50 mm in the VP and 60 mm in the HP. The apex is nearer to the VP than the base. Neither the base nor the apex is touching the VP or the HP. Draw the projections of the object. [15]

4. The view of a square pyramid from the front is an isosceles triangle ABC with BC parallel to the ground line. BC = 40 mm, AB = AC = 70 mm. The section plane appears as a straight line inclined at 45° to the base BC. The edge view of the section plane interests AC at a height of 10 mm above BC. The edge view of the section plane leans towards the left. Draw the development of the surface of the object. [15]

5. A horizontal cone of base diameter 100 mm and height 80 mm penetrates a vertical cylinder of base diameter 60 mm and height 100 mm such that both the axes intersect and are parallel to the VP. The apex of the cone is at the centre of an end generator of the cylinder. The two end generators of the cone passes through the ends of the end generator of the cylinder opposite to the end generator having the apex of the cone. Draw the views of the object and show the curves of interpenetration. [15]

6. A square pyramid of 50 mm base edge and height 70 mm is resting on its base on the ground with one of the base edges being parallel to the VP. It is cut by a horizontal plane which intersects and cuts axis at a distance of 50mm from the base. Another square pyramid whose base exactly coincides with the cut portion of the first pyramid and whose height is 50mm is placed on the first pyramid. Draw the isometric projection of the pyramids. [15]

7. Draw the front, top and both side views of the isometric projection given in figure. All dimensions are in mm. [15]



8. A cylinder of base diameter 50mm and axis 70mm long is resting on one of its generators on the ground such that it is parallel to the PP. One of the generators is touching the PP. The station point is along the central line of the object 60mm away from the PP and 70mm above the ground. Draw the perspective view of the object. [15]

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Code.No: 09A10591 | R09 | SET-4

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
I B.TECH – REGULAR EXAMINATIONS MAY - 2010
ENGINEERING DRAWING
(COMMON TO CSE, MEP)

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

Answer any FIVE questions
All questions carry equal marks

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1.a) A circle of 55mm diameter rolls along a straight line without slipping. Draw a curve traced out by a point P on the circumference for one complete revolution of the circle. Name the curve and draw a tangent to the curve at a distance 35 mm from the straight line.

b) Draw a diagonal scale of 1:2.5 showing centimeters and millimeters and long enough to measure up to 20 centimeters. Show a distance of 13.4 cm on it. [8+7]

2. Both the HT and the VT of a line above XY line. The distance between the VT and the HT measured parallel to XY is 10 mm. The VT and the HT measured perpendicular to XY is 10mm. The VT is nearer to the end of the line. The VT is 5 mm above XY and the HT 10mm above XY. The straight line is 100 mm long. The VT is 10 mm from the nearest end of the line as measured parallel to XY. Draw the projections of the line. Also find the inclinations of the line with the HP and the VP. [15]

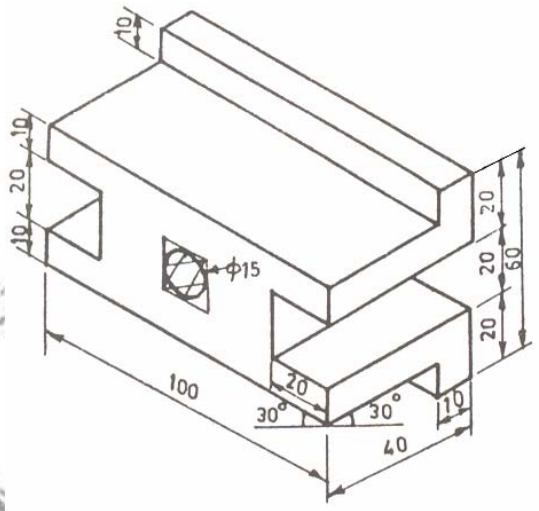
3. A right circular cone of base 40 mm diameter has the view from above and the view from the front in which the axis appears to be perpendicular to XY. The axis which is 80 mm long appears to be 50 mm long in the view from the front. The apex is touching the VP. Draw the projections of the cone. [15]

4. A triangular prism of base edge 30 mm and height 70 mm stands on one of the corners on the ground. The two edges connected with this corner make equal inclinations with the HP. The longer edge connecting the corner makes 30° to the HP. A section plane perpendicular to the VP and inclined at 60° to the HP cuts the object. The section plane passes through the mid point of the axis. Draw the development of the surface of the object. [15]

5. A cylinder of base diameter 60 mm is lying on one of its generators on the ground with the axis perpendicular to the VP. A cone with base diameter 60 mm and height 80 mm penetrates the cylinder with its axes parallel to both the HP and the VP. Both the axes intersect each other. Draw the views with the curves of interpenetration. [15]

6. A cylinder of base diameter 50mm and 70mm long is placed with the axis parallel to the both the VP and the HP. It is cut by a section plane perpendicular to the VP and inclined at 60° to the HP. It passes through a base circle along its diameter. Draw an isometric projection of the object such that the cut portion is visible to the observer. [15]

7. Draw the front, top and both side views of the isometric projection given in figure. All dimensions are in mm. [15]



8. A hollow cylinder of base diameter 50mm and axis 80mm long is resting on one of its generators on the ground with the axis making an angle of 30°, to the PP and leaning towards the right. The thickness of the cylinder is 10mm. A point on the circumference of the cylinder is 10mm. A point on the circumference of the outer circle of the base nearest to the PP is 20mm behind it. The station point which is on the central line of the axis is 60mm from the PP and 70mm above the ground. Draw the perspective projection of the object. [15]

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