Code No: 09A10391 **R09**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD
B.Tech I Year Examinations, May/June-2013
ENGINEERING DRAWING
(Common to ME, MCT, MMT, AME, MEP, MSNT)

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

Answer any five questions
All questions carry equal marks

1.a) A rectangular field of 25000 square metre is represented on a map by a rectangle of 5 cm × 4 cm sides. Calculate RF and draw a diagonal scale to read up to a single metre and long enough to measure up to 500 m. Mark a length of 362 m on the scale.

b) Draw a hypocycloid generated by a rolling circle of 60 mm diameter for one complete revolution. The radius of the directing circle is 100 mm. Draw a tangent and normal to the hypocycloid at 50 mm from the centre of the directing circle.

2. A thin circular plate of 50mm diameter is resting on point A of it's rim with the surface of the plate inclined at 45^0 to the H.P and the diameter through A inclined at 30^0 to the V.P. Draw the projection of the plate when it's centre is 40mm above the H.P. and 40 mm in front of the V.P.

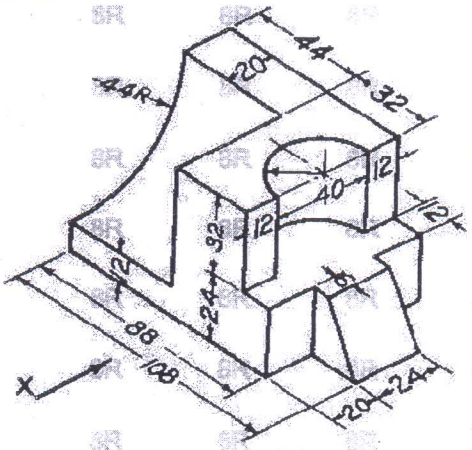
3. A pentagonal pyramid, side of base 25 mm and height 60 mm has one of its slant (triangular) faces on the H.P. and the edge of base contained by that slant edge makes an angle 30 degrees to the V.P. Draw its projections.

4. A cylinder of base diameter 65 mm and height 90 mm is cut by a plane inclined 45^0 to HP, perpendicular to VP and bisecting the axis of the cylinder. Draw the development of bottom part of the cylinder.

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.

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.

7. Draw the front, top and right side view of the isometric projection given in Figure. All dimensions are in mm.



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.

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