Code No: 111AJ

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech I Year Examinations, June – 2015

ENGINEERING DRAWING

(Common to ME, IT, MCT, MMT, AME, MSNT)

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

Answer any five questions

All questions carry equal marks

\- - -

1. Draw the epicycloid and hypocycloid, when the generating circle and the directing circle are of 50 mm and 175 mm diameters respectively. Construct the evolutes of the two curves. [15]

OR

2.a) Draw comparative scales of R.F. = 1/485000 to read upto 80 kilometres and 80 vests. 1 vest = 1.067 km.

b) 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 straight line is
i) twice its distance from the fixed point;
ii) Equal to its distance from the fixed point. [7+8]

3. A line PQ is 75 mm long and lies in an auxiliary inclined plane which makes an angle of 45^0 with the HP. The front view of the line measures 55 mm and the end P is in the VP and 20 mm above the HP. Draw the projections of PQ and find a) its inclinations with both the planes and b) its traces. [7+8]

OR

4. A plate having shape of an isosceles triangle has base 50 mm long and altitude 70 mm. It is so placed that in the front view it is seen as an equilateral triangle of 50 mm sides and one side inclined at 45^0 to xy. Draw its top view. [15]

5. A pentagonal pyramid, base side 30 mm, length of axis 80 mm is resting on a base edge on the HP with a triangular face containing that edge being perpendicular to the VP and inclined to the HP at 60^0. It is cut by horizontal section plane whose VT passes through the mid-point of the axis. Draw the front view, sectional top view and add a profile view. [15]

OR

6. A pentagonal prism is resting on one of the corners of its base on the HP. The longer edge containing that corner is inclined at 45^0 to the HP. The axis of the prism makes an angle of 30^0 to the VP. Draw the projections of the solid. Also draw the projections of the solid when the top view of axis is inclined at 30^0 to xy. Take the side of base 45 mm and height 70 mm. [15]

7. Draw the development of the surface of the portion of the hexagonal prism having a face parallel to the V.P., front view as shown below Figure 1. All dimensions are in mm. [15]

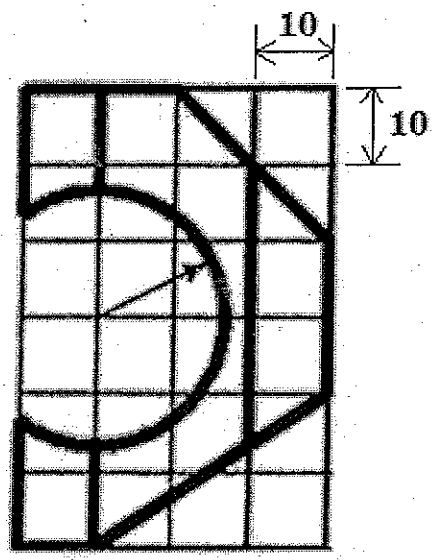

Figure: 1

OR

8. A cone frustum is 125 mm high, 85 mm diameter at the top and 115 mm diameter at the bottom. It is vertically placed and is completely penetrated by a horizontal cylinder 75 mm diameter and 125 mm long, the axis of which bisects the axis of the frustum. Draw the projections of the solids showing curves of the intersection. [15]

9. Draw the (a) Front view (b) Side view (c) Top view for the following figure 2. All dimensions are in mm. [5+5+5]

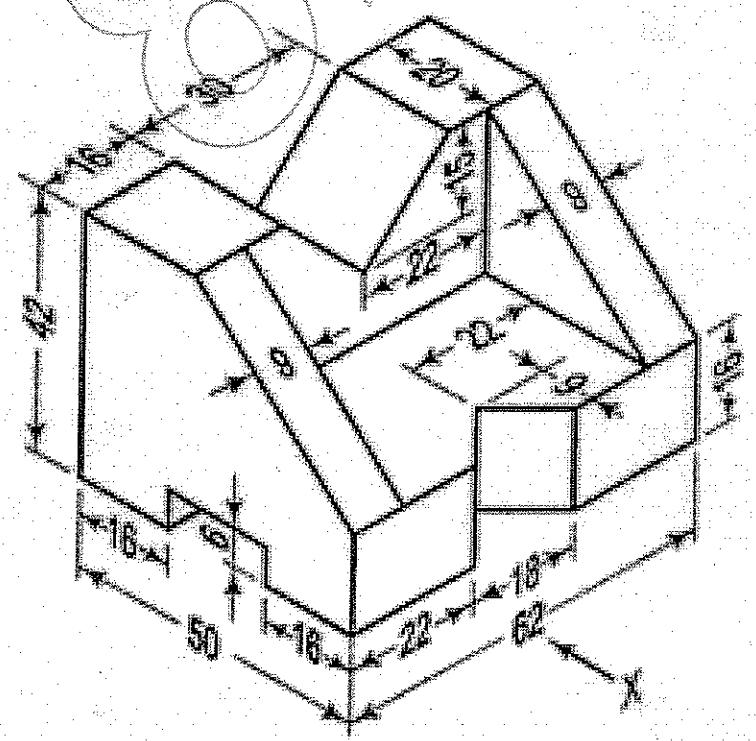

Figure: 2

OR