R09

Code No: 51010

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year Examinations, December - 2017
ENGINEERING DRAWING
(Mechanical Engineering (Mechatronics))

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

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

1.a) Construct a hypocycloid, for a combination of rolling circle 50 mm diameter and directing circle 175 mm diameter. Draw a tangent to it at a point 50 mm from the centre of the directing circle.

b) On a road map, a scale of miles is shown. On measuring from this scale, a distance of 25 miles is shown by a line 10 cm long. Construct this scale to read miles and to measure upto 40 miles. Construct a comparative scale, attached to this scale, to read kilometers upto 60 kilometres. 1 mile = 1.609 km. [15]

2.a) The projectors of the ends of a line PQ are 90 mm apart. P is 20 mm above the HP while Q is 45 mm behind the VP. The HT and VT of the line away from the projector of the end P. Draw the projections of PQ and determine its true length and inclinations with the two planes.

b) 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 (i) its inclinations with both the planes and (ii) its traces. [7+8]

3.a) 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.

b) Draw the projections of a rhombus having diagonals 125 mm and 50 mm long, the smaller diagonal of which is parallel to both the principal planes, while the other is inclined at 30^0 to the H.P. [7+8]

4. Draw the development of the surface of the portion of the pentagonal pyramid having a side of base parallel to the V.P., front view as shown in Figure 1. [15]

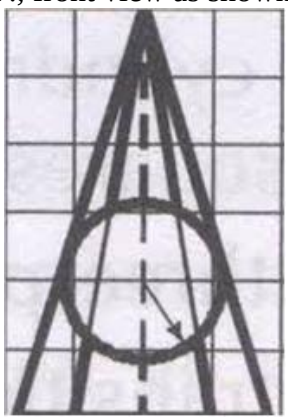

Figure: 1

5.a) A right circular cylinder of 75 mm diameter fully penetrates another of 100 mm diameter, their axes being at right angles to each other but 10 mm apart. Draw the projections of the curves of intersection on a plane parallel to the axes of the cylinders.

b) A cylinder, 50 mm diameter of base and 100 mm height is centrally penetrated by a cone, 50 mm diameter of base and 75 mm height. The axis of the cylinder which is vertical, cuts the axis of the cone which is horizontal at 30 mm from the base of the cone. Draw the front view and the side view, showing curves of penetration. [7+8]

6. Draw the isometric view of the following Figure 2. All dimensions are in mm. [15]

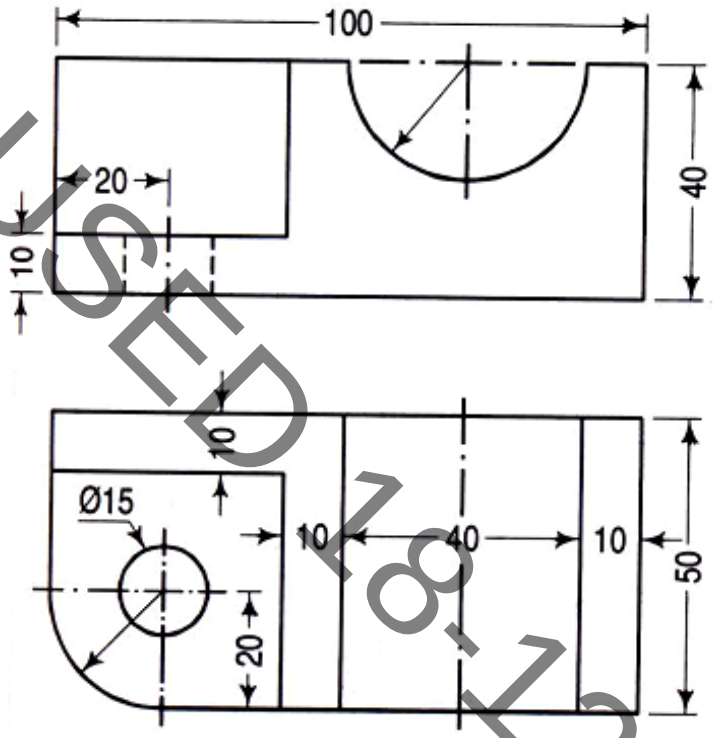

Figure: 2

7. Draw the a) Front view b) Side view c) Top view for the object shown in figure 3. All dimensions are in mm. [15]

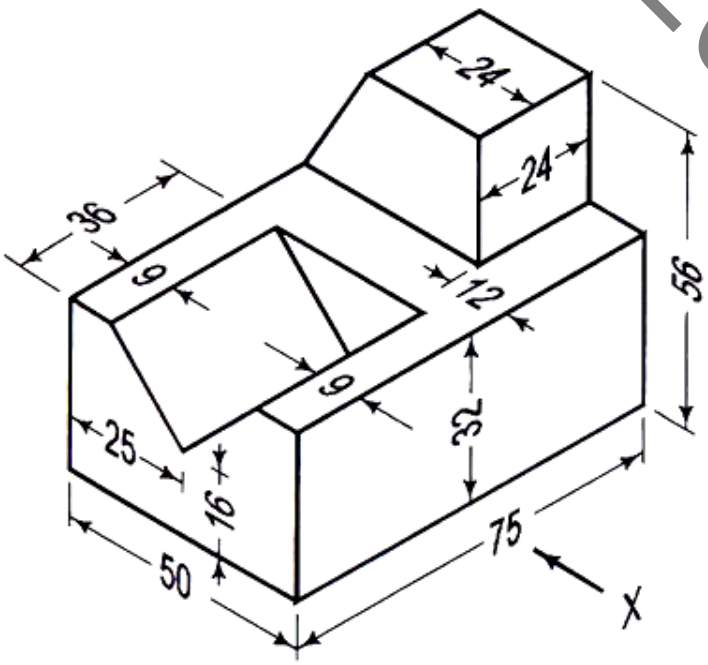

Figure: 3

8. Draw the perspective view of a square pyramid of base 30 mm, side and height of apex 45 mm rests on GP. The nearest edge of the base is parallel to and 20 mm behind the picture plane. The station point is situated at a distance of 70 mm in front of the PP and 40 mm to the right of the pyramid and 60 mm above the ground. [15]

---ooOoo---