

**B.E. / B.TECH. DEGREE EXAMINATIONS: DEC 2014**

First Semester

**MEC101: ENGINEERING GRAPHICS**

(Common to all Branches)

**Time: Three Hours**

**Maximum Marks: 100**

**Answer All Questions**

**(5 × 20 = 100 Marks)**

1. a) Construct a conic curve with an eccentricity of less than 1 (One). The distance between the focus and the directrix is 50 mm. Name the conic curve and draw the tangent and normal to the curve at a point 70 mm from the directrix. Assume the eccentricity suitably. Also find the major and minor axis length of the curve.

**(OR)**

- b) A straight line measuring 80 mm long has one of its ends 20 mm above HP and lying in the VP. The line is inclined at an angle of  $30^{\circ}$  to HP and  $45^{\circ}$  to VP. Draw and measure the front and top view of the straight line. Also measure the apparent angle of inclinations and the front and top view length of the line.

2. a) (i) Draw the projections of a hexagonal plane of side 30 mm has an edge on the HP. The surface is inclined at  $45^{\circ}$  to the HP and perpendicular to the VP. (10)

- (ii) Draw the projections of a circular plane of diameter 50 mm is resting on a point of the circumference on the VP. The plane is inclined at  $30^{\circ}$  to the VP and the centre is 35 mm above the HP. (10)

**(OR)**

- b) Draw the projections of a hexagonal pyramid of base edge 30 mm and axis 60 mm, has a triangular face on the ground and the axis parallel to the VP.

3. a) A pentagonal pyramid of base side 30 mm and axis 60 mm is resting on its base on the HP with an edge of the base parallel to the VP. It is cut by a section plane perpendicular to the VP.

Inclined at  $60^{\circ}$  to the HP and bisecting the axis. Draw its front view and sectional top view and true shape of section.

(OR)

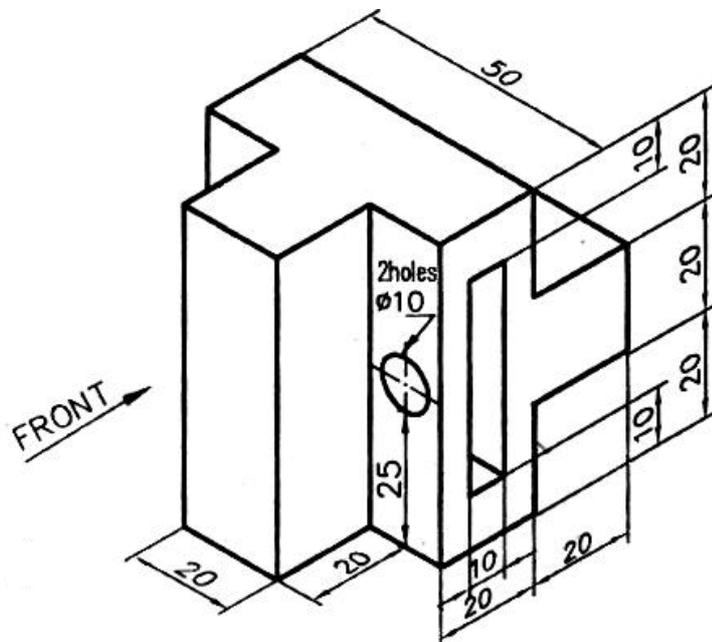
b) A hexagonal pyramid of base of side 25 mm and altitude 50 mm is resting vertically on its base on the HP with two of its side of the base perpendicular to the VP. It is cut by a plane perpendicular to the VP and inclined at  $40^{\circ}$  to the HP. The plane bisects the axis of the pyramid. Draw the development of the lateral surfaces of the pyramid.

4. a) Draw the isometric view of a hexagonal prism, side of base 30 mm and height 70 mm is resting on its base on the HP with a side of the base parallel to the VP. It is cut by an AIP inclined at  $45^{\circ}$  to the HP and bisecting the axis.

(OR)

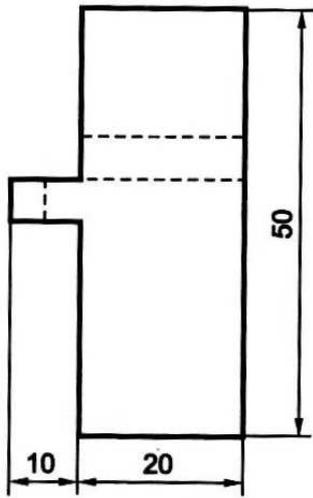
b) A Rectangular prism, 40 x 30 x 15 mm, rests on the ground on one of its ends with one of the largest edges touching the PP and the shortest edges receding to the left at an angle of  $40^{\circ}$  to the PP. The nearest vertical edge is 15 mm to the left of the station point which is at a distance of 55 mm in front of the PP and 30 mm above the ground. Draw the perspective view of the prism.

5. a) Make free hand sketches of front, top and right side views of the pictorial view shown below. (In figure, All Dimensions are in mm).

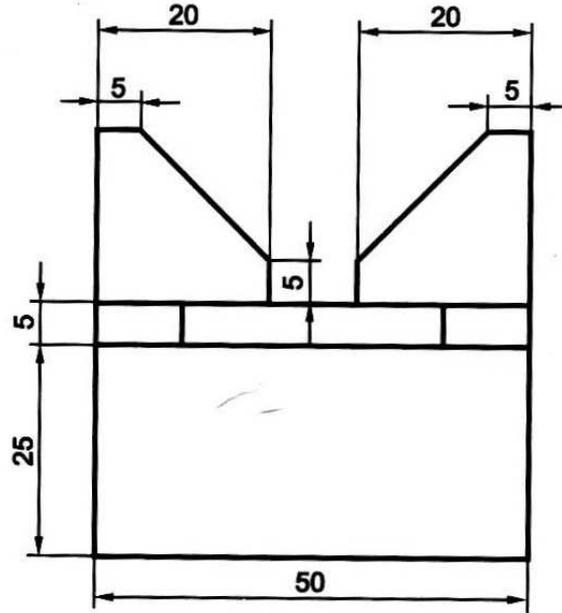


(OR)

b) Make a free hand isometric view of the object shown below. (In figure, All Dimensions are in mm)

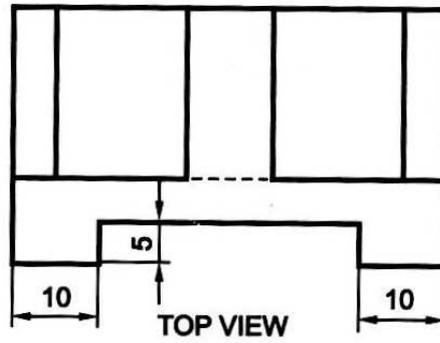


R.S. VIEW



FRONT VIEW

(b)



TOP VIEW

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