**Reg. No.**

**Time: Three Hours**             **Maximum : 100 Marks**

Answer **ALL** questions
**PART A - (5 X 20 = 100 Marks)**

| | | | | CO | RBT |
|---|---|---|---|---|---|

1. (a) Construct a Parabola, with the distance of the focus from the directrix **(20)**   **1**   **AP**
as 50 mm. Also, draw the normal and tangent to the curve at a point
40 mm from the directrix.

**(OR)**

(b) Draw the front, top and side views of the component shown in fig. 1 **(20)**   **1**   **AP**
(b), by free hand.



Front view     Fig. 1 (b)     Right Side View
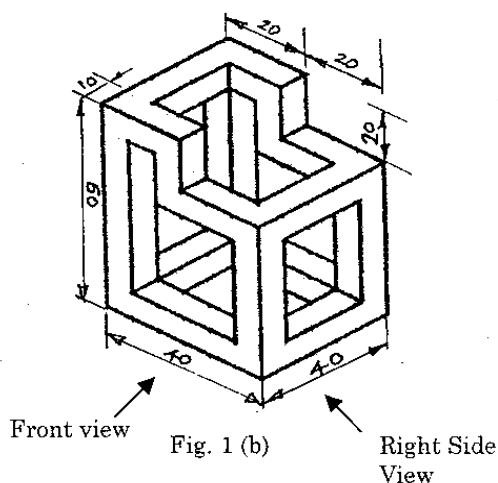
2. (a) A straight line 70 mm long has one end 15 mm infront of VP and 50 **(20)**   **2**   **AP**
mm above HP, while the other end is 35 mm infront of VP and 20
mm above HP. Draw the top and front views of the line.

**(OR)**

(b) A Pentagonal plate of side 25 mm has one of its sides on HP inclined **(20)**   **2**   **AP**
at 45° to the VP. Draw its projections when the plane surface is
inclined at 30° to HP.

3. (a) A Pentagonal pyramid of base edge 30 mm and axis length 60 mm rests on one of its base edges on the HP with its axis inclined at 30° to the HP and parallel to the VP. Draw its top and front views. **(20) 3 AP**

**(OR)**

(b) A hexagonal prism of base side 25 mm and axis length 55 mm lies on the HP on one of its lateral edges in such a way that two of its rectangular faces are equally inclined to HP. Draw it projections when the solid axis is inclined at 40° to the VP and parallel to the HP. **(20) 3 AP**

4. (a) A rectangular pyramid of base 30mm X 50mm and axis 50mm is resting on its base with the longer edge of the base parallel to VP. It is cut by a section plane perpendicular to the VP, inclined at 30° to HP and passing through a point on the axis 20 mm from the apex. Draw the front view, the sectional top view and the true shape of such a section of the pyramid. **(20) 3 AP**

**(OR)**

(b) A cone of base diameter 60 mm and height 70 mm is resting on HP on its base. A section plane inclined at 40° to HP and perpendicular to VP meets the solid axis at a distance of 30mm above the base. Draw the development of the lateral surface of the truncated cone. **(20) 3 AP**

5. (a) A cylinder of diameter 60 mm and height 60 mm it is resting on one of its ends on the HP. It is cut by a sectional plane perpendicular to VP and inclined at 45° to the HP. The plane passes through the point on the axis which is located at 15 mm from the top of the cylinder. Draw the isometric view of a truncated cylinder. **(20) 4 AP**

**(OR)**

(b) A square prism of side of base 40 mm and height 70 mm rests with its base on the ground such that one of its rectangular faces is parallel to and 10 mm behind the picture plane. The station point is 30 mm in front of PP, 80 mm above the ground plane and lies in a central plane 45 mm to the right of the center of the prism. Draw the perspective projection of the prism. **(20) 4 AP**