a) Attempt **FOUR** questions taking **ANY TWO** from each half.
b) All questions carry equal marks and one mark is reserved for neatness in each half.

FIRST HALF

Q. 1. A pentagonal prism of side of base 25 and the axis 40 long is resting on H. P. on a corner of its base. Draw the projections of the prism, when the base is inclined at 60^0 to H. P. and the axis appears to be inclined at 30^0 to V. P.   [17]

Q. 2. A hexagonal prism of side of base 30 and length of the axis 75, is resting on a corner of its base on H. P., with the longer edge containing that corner inclined to H. P. at 30^0. It is cut by a section plane parallel to H. P. and passing through the mid-point of the axis. Draw the sectional top view of the solid.   [17]

Q. 3. Draw Isometric view of the following figures.   [17]
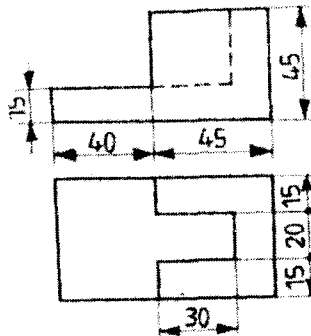
SECOND HALF

4. On a map an area of 6 cm^2 represents a similar shaped 3456 m^2 area of land. Calculate the R.F. Draw a vernier scale with that R.F. to read up to single metre and long enough to show 300 metre. Also show distances of 246 m and 69 m on the scale.   [17]

5. Two cities are there near border region of a country. The border is straight in the region and the nearest of two cities is 50 km away from the border. A spying aircraft is flying over the region in an elliptical path such a way that it is maintaining a constant distance ratio of 3:2 with the borderline and the city located nearer to the border. Trace the path of the aircraft in a suitable scale. Also locate the other city if it is at the focus of the path and also determine the distance between two cities.   [17]

6. A straight line AB is 80 mm long and its plan and elevation are 70 mm and 60 mm, respectively. The end A is in H.P. and 10 mm in front of VP. Draw its projection and determine the true inclinations of the line with H.P. and V.P. Also mark the H.T. and V.T. of the line.   [17]