(*c*) Write the following using single stroke upper case vertical letters and inclined letters with letter size 12 mm and standard height-width ratio.

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2. (*a*) Construct a diagonal scale of R-F. = 1 : 5000 showing single metres and long enough to measure up to 800 metres. On the scale show a distance of 587 metres. $7\frac{1}{2}$

(*b*) Construct a hyperbola whose distance between directrix and vertex is 24 mm having an eccentricity of 4/3. $7\frac{1}{2}$

3. (*a*) A ball thrown up in the air reaches a maximum height of 180 metres and travels a horizontal distance of 140 m. Trace the path of the ball assuming it to be parabolic. $7\frac{1}{2}$

(*b*) The end point *A* of a straight line *AB* = 36 mm long is 15 mm away from HP and VP and another point *D* is 30 mm away from HP and VP. Draw the top view and front view of the straight line *AD* and determine the true inclination with HP and VP respectively. $7\frac{1}{2}$

4. (*a*) Draw the projections of a circle of 50 mm diameter having it's plane vertical and inclined at 30° to the V.P. it's centre is 40 mm above HP and 30 mm in front of V.P. $7\frac{1}{2}$

(*b*) A square prsism of side 30 mm, and 60 mm high is resting on HP. A vertical square bore of 15 mm side is cut through it's face reaching the other square face of the prism. Draw the isometric projection of the prism. $7\frac{1}{2}$

5. An hexagonal prism having base 20 mm and height 70 mm is resting on an edge of it's base on HP, in such a way that the base makes an angle of 45° with the HP. Draw it's projection. 15

6. Mention the commands and step by step procedure for drawing the following using AUTO CAD software

(*a*) A rectangle defined by diagonal points (50, 50) and (150,110)

(*b*) A circle using 3 points (130, 20), (175, 50) and (150, 75)

(*c*) Inclined line from (50, 50) with a taper of 1 : 15 using relative co-ordinates. 15