**R9**

**ENGINEERING DRAWING**
(Common to EEE, ECM and AE)

Time: 3 hours                                                                                    Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
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1 (a)   The major and minor axis of an ellipse is 120 & 80 mm. Draw an ellipse by arcs of circles method.

   (b)   The asymptotes of a hyperbola are inclined at $70^0$ to each other. Construct the curve when a point *p* on it is at a distance of 20 and 30 from the two asymptotes.

2 (a)   The top view of a 75 mm long line CD measures 50 mm. C is 50 mm in front of the V.P. and 15 mm below the H.P. D is 15 mm in front of the V.P. and is above the H.P. Draw the front view of CD and find inclinations with the H.P. and the V.P. Show also its traces.

   (b)   A line CD 80 mm long has its end C 55 mm in front of VP and 15 mm above HP. The line is inclined at $50^0$ to HP and $40^0$ to VP. Draw the projections of the line.

3 (a)   A regular pentagon of 25 mm side has one side on the ground. Its plane is inclined to H.P at $45^0$ and perpendicular to V.P. Draw its projections

   (b)   Draw the projections of circle diameter of 5 cm having its plane vertical and inclined at $30^0$ to the V.P Its center is 3 cm above H.P and 2 cm in front of V.P.

4 (a)   Draw the projections of a regular hexagonal prism, side of base 25 mm and axis 50 mm long resting with its base on H.P. such that one of its edges of the base is inclined at $20^0$ to V.P.

   (b)   A hexagonal prism ,side of base 25mm and axis 50mm long rests with one of its base makes an angle of $60^0$ to H.P .and its axis is parallel to V.P. Draw its projections.

5         A square prism of 40 mm side and 60 mm height rests on its base on HP such that the vertical faces are equally inclined to VP. A horizontal hole of 40 mm diameter is drilled through the geometrical center of the prism with the axis perpendicular to VP. Develop the lateral surface of the prism.

6      Draw the front view, top view, right and left side views of the object shown below (dimensions in mm).
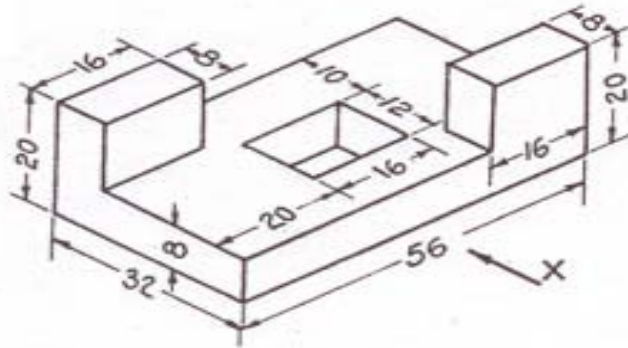


7      A square hole of 35 mm side is cut in a cylindrical shaft 75 mm diameter and 125 mm long. The axis of the hole intersects that of the shaft at right angles. All faces of the hole are inclined at $45^0$ to the H.P. Draw three views of the shaft when the plane of the two axes is parallel to the V.P.

8      A square pyramid of side of base 20 mm and axis 30 mm long rests with its base on the ground plane such that one of its base sides is parallel to the picture plane and 10 mm in front of it. The station point is 40 mm in front of the picture plane, 15 mm to the left of the axis of the pyramid and 60 mm above the ground. Draw the perspective projection.

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