INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

B.Tech I Semester End Examinations (Regular) - December, 2017

Regulation: IARE-R16

ENGINEERING DRAWING

(Aeronautical Engineering)

Time: 3 Hours   **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) Construct a diagonal scale 1/50, showing meters, decimeters and centimeters, to measure up to 5 meters. Mark a length 4.75 m on it. **[7M]**

   (b) The vertex of a hyperbola is 65 mm from its focus. Draw the curve if the eccentricity is 3/2. Draw a normal and a tangent at a point on the curve, 75 mm from the directrix. **[7M]**

2. A circle of 40 mm diameter, rolls on the concave side of another circle of 40 mm radius. Draw the path traced by a point on the generating circle for one complete revolution. **[14M]**

UNIT – II

3. 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 H.P. D is 15 mm in front of the V.P. and is above H.P. Draw front view of CD and find its inclinations with H.P. and V.P. **[14M]**

4. The plate having shape of isosceles triangle has base 50 mm long and altitude 70 mm. It is so placed that the front view, it is seen as an equilateral triangle of 50 mm sides and onside inclines at 45° to xy. Draw its top view.

   [14M]

UNIT – III

5. Draw the projections of a pentagonal pyramid with a side of base 30mm and axis 70mm long when

   (i)one of its triangular faces is perpendicular to HP **[14M]**

   (ii)one of its slant edges is vertical.

6. An equilateral triangular prism of side of base 25 and axis 50 long, is resting on an edge of its base on H.P. The face containing that edge is inclined at 30° to H.P. Draw the projections of the prism when the edge on which the prism rests, is inclined at 60° with V.P. **[14M]**

UNIT – IV

7. A right regular pentagonal pyramid, side of base 36 mm and height 64 mm rests on its base upon the ground with one of its base sides parallel to V.P. A section plane perpendicular to V.P. and inclined at 30° to H.P. cuts the pyramid, bisecting its axis. Draw the development of the truncated pyramid.

[14M]

8. A frustum of cone of base diameter 50 mm, top diameter 30 mm and height 45 mm is resting upon its base on H.P. Draw the isometric projection of the frustum. [14M]

UNIT – V

9. Convert the isometric view of the picture shown in the Figure 1 into orthogonal projection of all three views. All dimensions are in mm. [14M]
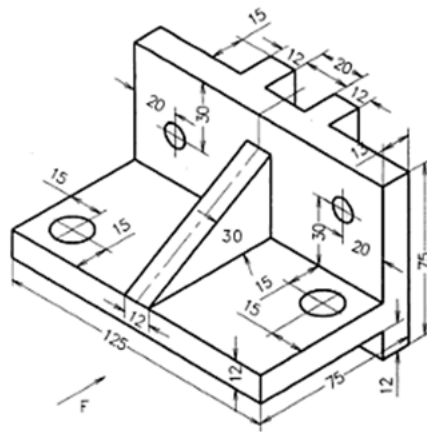

Figure 1

10. For the given orthographic projections as shown in Figure 2, draw the isometric view. All dimensions are in mm. [14M]
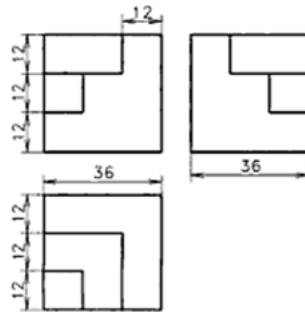

Figure 2

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ENGINEERING DRAWING

(Common for ME | CE)

Time: 3 Hours   **Max Marks: 70**

Answer ONE Question from each Unit
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UNIT – I

1. (a) On a plan, a line of 22 cm long represents a distance of 440 meters. Draw a diagonal scale for the plan to read up to a single meter. Measure and mark a distance of 187 m on the scale. **[7M]**

   (b) A stone is thrown from a building of 7 m high and at its highest flight it just crosses a palm tree 14 m high. Trace the path of the stone, if the distance between the building and the tree measured along the ground is 3.5 m. **[7M]**

2. A thread of length 165 mm is wound around a circle of 40 diameter. Trace the path of end point of the thread. **[14M]**

UNIT – II

3. The top view PQ of a straight line is 70 mm long and makes an angle of 60° with the XY line. The point Q is 10 mm in front of VP and 30 mm above HP. The difference between the distances of P and Q above the HP is 45 mm. Draw the projections and traces. Determine its true length. **[14M]**

4. A regular pentagon of 30 mm side is resting on HP on one of its sides while its opposite corner is 30 mm above HP. Draw projections when side in HP is inclined at 30° to VP. **[14M]**

UNIT – III

5. A pentagonal prism is resting on a corner of its base on the ground a larger edge containing that corner inclined at 45° to H.P. and the vertical plane containing that edge and the axis inclined at 30° to the V.P. draw its projections. Base 40 mm side; height 65 mm. **[14M]**

6. A cone, of base diameter 50 mm and 60 mm height, has one of its generator on H.P. If the axis of the cone is seen as 45° inclined to xy line in the top view and the apex is nearer to V.P. Draw the projections of the cone. **[14M]**

UNIT – IV

7. A right circular cone, 70 mm base and 70 mm height, rests on its base on the ground plane. A section plane perpendicular to V.P. and inclined at 30° to H.P. cuts the cone, bisecting its axis. Draw the development of the lateral surface of the cone. **[14M]**

8. A pentagonal pyramid, base 30 mm and axis 65 mm long, rests with its base on H.P. an edge of the base is parallel to V.P. and nearer to it. A horizontal section plane cuts the pyramid and passes through a point on the axis at a distance of 25 mm from the apex. Draw the isometric projection of the frustum of the pyramid. **[14M]**

UNIT – V

9. Convert the isometric view of the picture shown in the Figure 1 into orthogonal projection of all three views. **[14M]**
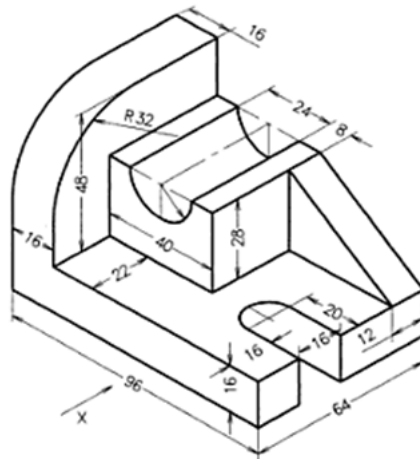

Figure 1

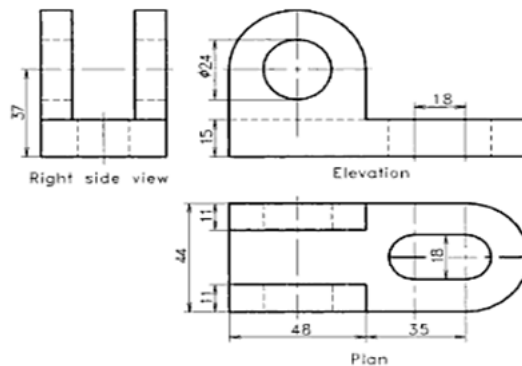10. For the given orthographic projections as shown in Figure 2, draw the isometric view. **[14M]**

Figure 2