Hall Ticket No	Question Paper Code: AME001
INSTITUTE OF AERONAUTICAL EN (Autonomous)	GINEERING
B.Tech I Semester End Examinations (Supplementary) - February, 2018 <b>Regulation: IARE-R16</b> <b>ENGINEERING DRAWING</b> (Common to AE   ME   CE)	
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

# $\mathbf{UNIT} - \mathbf{I}$

- 1. (a) Construct a diagonal scale of  $S.F = 1/(2.5 \times 10)$  to read up to a single kilometer and long enough to measure 400 km. Mark a length of 254 km on it. [7M]
  - (b) Construct a parabola in a parallelogram of side 100 mm x 60 mm and with an included angle of  $75^0$ . [7M]
- 2. (a) The major and minor axes of an ellipse are 120 mm and 80 mm. Draw an ellipse by oblong method. [7M]
  - (b) Draw the involute of an equilateral triangle of side 20 mm. [7M]

## $\mathbf{UNIT}-\mathbf{II}$

- 3. The top view PQ of a straight line is 70 mm long and makes an angle of 60<sup>0</sup> 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  $30^{0}-60^{0}$  set square with longest side measuring 125 mm is placed such that the longest side is in HP, making an angle of  $30^{0}$  with VP. The surface of the set square is inclined at  $45^{0}$  to HP. Draw its projections. [14M]

### $\mathbf{UNIT} - \mathbf{III}$

- 5. A pentagonal pyramid 30 mm side of base and axis 50 mm is resting on HP on one of its base edges such that the triangular face containing that edge is lying on HP. Draw the projections of the pyramid when the axis is inclined to VP at  $45^0$ . [14M]
- 6. A hexagonal prism of 25 mm side of base and height 50 mm rests on one of its edges on HP such that the axis is inclined at an angle of  $45^0$  to HP. Draw the projections of the prism when the axis appears to be inclined to VP at  $40^0$ . [14M]

#### $\mathbf{UNIT}-\mathbf{IV}$

- 7. A cone of base 50 mm diameter and axis 60 mm long, is resting on its base on HP. It is cut by a section plane, perpendicular to VP and parallel to an extreme generator and passing through a point on the axis at a distance of 20 mm from the apex. Draw the development of the retained solid. [14M]
- 8. A hemisphere of diameter 50 mm is resting on its curved surface centrally on the top face of the frustum of a rectangular pyramid of base 80 mm x 60 mm and top 60 mm x 40 mm having height 55 mm. Draw the isometric projections of the combination. [14M]

#### $\mathbf{UNIT}-\mathbf{V}$

9. Convert the isometric projection of the given Figure 1 into orthographic projections by drawing the front view, top view and side view.(All dimensions are in mm) [14M]



Figure 1

10. Convert the isometric projection of the given Figure 2 into orthographic projections by drawing the front view, top view and side view.(All dimensions are in mm) [14M]



Figure 2