Hall Ticket	z No	stion Paper Code: AME001
IARE	INSTITUTE OF AERONAUTICAL ENGINEERING (Autonomous)	
ON FOR LIVE	Four Year B.Tech I & Semester Supplementary Examinations - July, 2018 Regulation: IARE – R16	
ENGINEERING DRAWING		
Time: 3 Hou	Irs (Common to AE ME CE)	Max Marks: 70
Answer ONE Question from each Unit		

All Questions Carry Equal Marks Take appropriate scale factor if necessary All parts of the question must be answered in one place only

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

- (a) A coin of 40mm diameter rolls over a horizontal table without slipping. A point on the circumference of the coin is in contact with the table surface in the beginning and after one complete revolution. Draw the path traced by the point. Draw normal and tangent at a point on the curve.
 - (b) A car is running at a speed of 45 kilometre per hour. Construct a plain scale to read a minimum of a kilometre and a minute. The scale should measure up to a maximum of 40km. The R.F of the scale is 1/250000. Show the distance covered by the car in 36min. [7M]
- (a) A cricket ball thrown from the ground level reaches the wicket keeper's gloves. Maximum height reached by the ball is 5m. The ball travels a horizontal distance of 11m from the point of projection. Trace the path of the ball. [7M]
 - (b) Draw a hypocycloid of a circle of 40mm diameter which rolls inside another circle of 160mm diameter, for one revolution counter clock wise. Draw a tangent and a normal to it at a point 65 from the centre of the directing circle [7M]

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

3. (a) Indicate the positions of the points in the Figure 1 given below with respect to the planes of projection. [7M]



Figure 1

- (b) The midpoint of a straight-line AB is 60mm above HP and 50mm infront of VP. The line measures 80mm long and inclined at an angle of 30° to HP and 45° to VP. Draw its projections [7M]
- 4. (a) A kid is punished by his teacher for not finishing assignment. The teacher used a stick of 80mm long, when he started beating the kid the stick is at 30^0 to floor and 45^0 side wall. The holding end of stick is at a height of 20mm from ground and 30mm in front sidewall. Draw the projections of the stick [7M]
 - (b) Draw an equilateral triangle of 75 mm side and inscribe a circle in it. Draw the projections of the figure when the plane is vertical and inclined at 30^0 to the VP and one of the sides is inclined at 45^0 to the HP. [7M]

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

5. (a) A cube of 30 mm sides is held on one of its corners on HP such that the bottom square face containing that corner is inclined at 30⁰ to HP. Two of its adjacent base edges containing the corner on which it rests are equally inclined to VP. Draw the top and front views of the cube

[7M]

- (b) A pentagonal pyramid base 25 mm side and axis 50 mm long has one of its triangular faces in the VP and the edge of the base contained by that face makes an angle of 30^0 with the HP. Draw its projections [7M]
- 6. (a) A right circular cone, 40 mm base diameter and 60 mm long axis is resting on HP on one point of base circle such that it's axis makes 45⁰ inclination with HP and 40⁰ inclination with VP. Draw it's projections [7M]
 - (b) A cylinder 40 mm diameter and 50 mm axis is resting on one point of a base circle on VP while it's axis makes 45⁰ with VP and FV of the axis 35⁰ with HP. Draw projections. [7M]

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

- (a) A hexagonal pyramid of side of base 30mm and axis 70mm rests on its base with two edges of the base parallel to VP. A circular hole of diameter 30mm is completely drilled through the pyramid such that the axis of the hole is perpendicular to VP and intersects with the axis of the pyramid at a distance of 50mm from the apex. Develop the lateral surface of the pyramid with the shape of the hole formed in it. [7M]
 - (b) A cone made up of Aluminium sheet with base circle diameter 65 mm and axis length 75 mm is kept on its base on the ground. A circular hole of 30 mm diameter is cut through the cone such that its axis remains perpendicular to V.P.; 10 mm to the right of the axis of cone and 25 mm above the base of cone. Develop the surface of the cone. [7M]
- 8. Draw the isometric view of the Figure 2 given below (All dimensions are in mm) [14M]



Figure 2

- $\mathbf{UNIT}-\mathbf{V}$
- 9. Draw the elevation ,plan and side view from the right of the object whose isometric view is shown in the Figure 3 below (All dimensions are in mm) [14M]



Figure 3

10. Draw the front view, top view and side view of the object whose isometric view is shown in the Figure 4 below (All dimensions are in mm) [14M]



Figure 4