SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

ADITYA SILVER OAK INSTITUTE OF TECHNOLOGY

BE - SEMESTER–I • MID SEMESTER-II EXAMINATION – WINTER 2018

SUBJECT: ENGINEERING GRAPHICS AND DESIGN (3110013) (CE/IT/EC/EE)

DATE: 20-12-2018   TIME: 02:00 pm to 03:45 pm   TOTAL MARKS: 40

Instructions: 1.Q. 1 is compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Q.1 (a) Define Representative Fraction. Explain types of scales. [03]

(b) Give detailed classification of solids. [03]

(c) Construct a diagonal scale of representative fraction = (1/36) showing yard, foot and inch. Scale should be long enough to measure 5 yard. Measure 3 yard, 2 foot, and 9 inch. [04]

Q.2 (a) A 30º-60º set square has its shorter side 50 mm long and it is in HP. The top view of the set square is an isosceles triangle and hypotenuse of the set square is inclined at an angle of 40º with VP. Draw the projections of the set square and its inclination with HP. [06]

(b) In a slider crank mechanism the connecting rod AB is 120 mm long and crank OA is 40 mm long. The end B moves along the straight line passing through O. Trace the locus of point P, 45 mm from A, along the connecting rod for one revolution of crank OA. [05]

(c) A thin composite plate consists of a square ABCD of 50 mm sides with an additional semi-circle constructed on CD as a diameter. The side AB is in the VP and surface of a plate makes 45º with VP. Draw the projections. [04]

OR

Q.2 (a) A pentagonal plate, of sides 50 mm has a central equilateral triangular hole of 40 mm sides, with a side of plate and that of triangle parallel to each other. The plate is kept on HP on this side, the side being inclined at 30º VP. If the highest point of the plate is 40 mm above HP, draw the projections of the plate. [06]

(b) Figure No. 1 shows the four bar chain mechanism O1ABO2 and the dimensions of are as below: O1A = O2B = 1125 mm and connecting link AB = 375 mm. Draw the locus of midpoint M of AB, considering O1A as driving link. [05]

(c) An elliptical plane with major axis 70 mm and minor axis 50 mm is inclined to HP such that top view of plane is a circle. Draw the projections of the plane. Use concentric circle method to draw top view of the plane in initial stage. [04]

Q.3 (a) Draw the projection of a cone, base 44 mm diameter and axis 50 mm long, when [06] it is resting on the H.P. on a point of its base circle with the axis making an angle of 45° with H.P. and 30° with V.P.

(b) A hexagonal Prism, side of base 30 mm and height 60 mm, is standing upright [05] with base on H.P. two sides of the base and axis are parallel to V.P. It is cut by section plane making an angle of 60° to H.P. and crossing the axis 10 mm from the top. Draw front view and sectional top view of the prism.

(c) On a map of a state, 1 cm represents 5 kms. Construct a plain scale long enough [04] to measure a distance between two city 100 kms far from each other.

OR

Q.3 (a) A tetrahedron of 50mm edge is resting on HP on one of its edge. Face passing [06] through that edge is perpendicular to HP and parallel to VP. Draw its projections.

(b) A transparent cylindrical container, diameter of base 60 mm and height 75 mm, [05] is full of water. It is tilted by angle from vertical so that half the water is drained out, find angle and draw the projections.

(c) Construct a plain scale to show metres when 1 centimetre represents 5 metres [04] and long enough to measure up to 50 metres. Mark a distance of 32 metres on the scale.
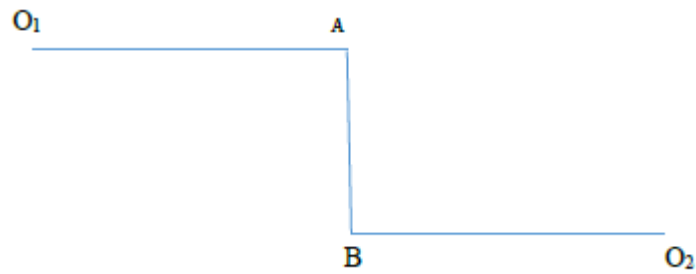

Figure 1