Enroll. No. _____

SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

ADITYA SILVER OAK INSTITUTE OF TECHNOLOGY

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

SUBJECT: ENGINEERING GRAPHICS & DESIGN (3110013) (CE, EC, IT, EE)

DATE: 08-10-2018 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) Give Answer with most suitable/correct option. [05]

(i) Following is not included in title block of drawing sheet
(a) Drawing no. (b) Scale (c) Method of projection (d) Size of sheet

(ii) If generating point is inside the rolling circle and rolling circle is inside the directing circle, the curve obtained is
(a) Hypocycloid (b) Epicycloid (c) Inferior Hypotrochoid (d) Inferior Epitrochoid

(iii) A line PQ 60 mm long, its end P on VP and end Q on HP. Line is inclined to HP by 60° and VP by 30°, its true length can be obtained in
(a) Elevation (b) Plan (c) Side view (d) None

(iv) If point is above HP, behind VP then in which quadrant it lies?
(a) 1st (b) 2nd (c) 3rd (d) 4th

(v) In orthographic projections, the rays assumed to
(a) diverge from point (b) converge to point (c) be parallel (d) None

(b) Draw an Archimedean spiral of 1.5 convolutions, the greatest and least radii being 125 mm and 35 mm respectively. [05]

Q.2 (a) A line AB contains a point C on it such that the ratio of the distance of the CB:AC is 2:1. The end A is 20 mm above H.P. and it is in 1st quadrant. And the other end B is in V.P. The point C is 35 mm above H.P. The line is inclined with the H.P. at an angle 30°. The elevation length of the line AB is 70 mm. Draw the projections of the line AB. [06]

(b) Construct the Hyperbola if the distance between the focus and directrix is 50 mm. The eccentricity is 3/2. [05]

(c) Draw an involute of a line of 10 mm for 2 turns. [04]

OR

Q.2 (a) Top View of a 75mm long line CD measures 50mm. End C is in HP and 50mm in front of VP. End D is 15mm in front of VP and it is above HP. Draw projections of CD and find angles with VP and HP. [06]

(b) Two points A & B are 100 mm apart. Third point C is 75 mm from A and 50 mm from B. Draw an ellipse passing through A, B and C. [05]

(c) Explain the terms: (i) Eccentricity (ii) Involute (iii) Hypocycloid [04]

Q.3 (a) Using first angle projection method. Draw the following views for fig. 1. [06]
(a) Front view (b) Left Hand Side View

(b) A line is measuring 80 mm long has one of its end 60 mm above H.P. and 20 mm in front of V.P. The other end is 15 mm above H.P. and in front of [05]

V.P. The front view of the line is 60 mm long. Draw the projection of line and find the true angle of inclination of line with H.P. and V.P.

(c) Differentiate 1st angle and 3rd angle projection systems [04]

OR

Q.3 (a) Draw the orthographic projections 1) Plan 2) Elevation according to third angle method of projection. Refer fig. 2. [06]

(b) The distance between the end projectors of the line KL is 48 mm. The end K is 20 mm below HP and 25 mm behind VP. The end L is 12 mm above HP and 40 mm in front of VP. Determine the true length of PQ, inclination with HP and VP. Also find its apparent angles. [05]

(c) Why 2nd and 4th angle projection systems are not used in orthographic projections? Also draw symbols of 1st angle and 3rd angle projection systems. [04]

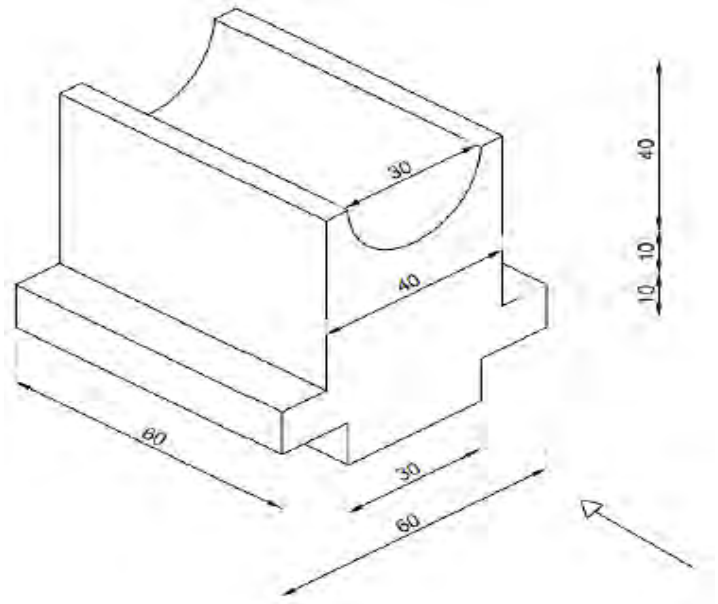

Fig. 1

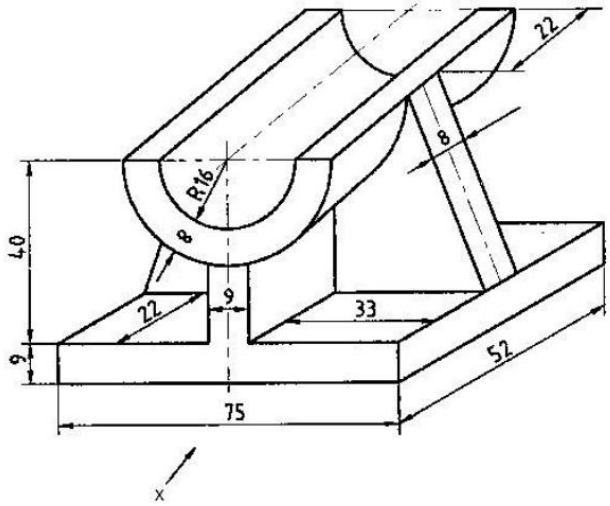

Fig. 2