

Enrollment No: \_\_\_\_\_

Exam Seat No: \_\_\_\_\_

# C.U.SHAH UNIVERSITY

## Summer Examination-2017

**Subject Name : Engineering Graphics & CAD**

**Subject Code : 4TE02EGC1**

**Branch: B.Tech (All)**

**Semester : 2**

**Date : 09/05/2017**

**Time : 02:00 To 05:00**

**Marks : 70**

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1

Attempt the following questions:

14

- a) The following is not included in title block of drawing sheet.  
i) Sheet No ii) Scale iii) Method of Projection (iv) Size of sheet
- b) This line pattern is composed of three dashes, one long dash on each end with a short dash in the middle: i) Object ii) Hidden iii) Center iv) Phantom.
- c) In first angle projection method, object is assumed to be placed in  
i) First quadrant ii) Second quadrant iii) Third Quadrant iv) Fourth quadrant
- d) The type of line that projects from an object for the express purpose of locating a dimension is a \_\_\_\_\_ line.  
(i) visible (ii) hidden (iii) extension (iv) dimension.
- e) Hatching lines are drawn at \_\_\_ degree to reference line.  
i) 30 ii) 45 iii) 60 iv) 90
- f) A French curve is used to draw  
i) Circles ii) Ellipses iii) Smooth freeform curves iv) Polygon.
- g) In aligned system of dimensioning, the dimensions may be read from  
i) Bottom or right hand edges ii) Bottom or left hand edges iii) Only from bottom iv) Only from left side
- h) Center lines are used to locate or represent the centers of \_\_\_\_\_ . :  
i) arcs ii) circles iii) hidden round features iv) all of the above.
- i) The isometric axes are inclined at \_\_\_ degree to each other. i) 60 ii) 90 iii) 120 iv) 150
- j) A cylinder can be created by drawing a rectangular shape then the \_\_\_\_\_ tool.  
(i) Revolve (ii) Sweep (iii) Extrude (iv) none of the above.
- k) When the line is parallel to VP and perpendicular to HP, we can get its true length in  
i) Front view ii) Side view iii) Both 'a' and 'b' iv) Top view
- l) An advantage of this type of view is that each view shows the object all the way through as if it were transparent: (i) Planar (ii) Horizontal (iii) Auxiliary (iv) Orthographic.
- m) A right regular hexagonal prism in resting on HP on its base, its top view is a  
i) Square ii) Rectangle iii) Hexagon iv) Pentagon
- n) This type of solid has two bases that are parallel equal polygons:  
(i) Pyramid (ii) Prism (iii) Cone (iv) Torus.

Attempt any four questions from Q-2 to Q-8

Q-2

Attempt all questions

- a) Define R. F. and derive a formula for it.

04



- b) Explain Systems of Dimensioning in brief. 05
- c) As seen in the Figure-1 (plan), AD and DB are two equal size portions of a folding door hinged at D. The length of span CB is 150 mm. The end B is fixed and the end A is constrained to move along line BC. Draw the locus of the midpoint P of AD for a complete movement of the folding door. 05

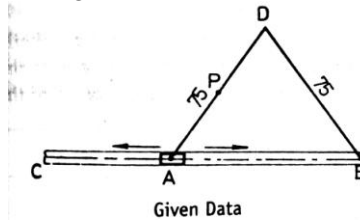


Figure-1

- Q-3 Attempt all questions
- a) The front view of a 100 mm long line AB measures 65 mm. A is 50 mm above H.P. and 25 mm in front of V.P. B is 20 mm above H.P. and in front of V.P. Draw the projections of line and find out the length of top view, true inclination of the line and apparent inclination with both the reference planes. 07
- b) Draw the projection of a circle of 50 mm diameter resting in the H.P. on the circumference, its plane inclined at  $45^\circ$  to the H.P. and the top view of the diameter AB making  $30^\circ$  angle with the V.P. 07
- Q-4 Attempt all questions
- a) A line PQ, 50 mm long is in VP. It makes an angle of  $30^\circ$  with the HP. Point P is 20 mm above HP. Draw the projections of line PQ. 07
- b) A regular hexagon of 40 mm side has a corner in the HP. Its surface makes  $45^\circ$  with the HP and the top view of the diagonal through the corner, which is in the HP, makes  $60^\circ$  with VP. Draw its projections. 07
- Q-5 Attempt all questions
- a) Draw the projection of a cone, base 30 mm diameter and axis 50 mm long, resting on a point of its base circle with the axis making an angle of  $30^\circ$  with the HP and its top view making an angle of  $45^\circ$  with VP. 07
- b) Draw the Development of lateral surface of a cylinder of base diameter 40 mm and height 60 mm kept on HP on its base and it is cut by an auxiliary inclined plane inclined at  $45^\circ$  to HP and bisecting the axis of the cylinder 07
- Q-6 Attempt all questions
- a) A hexagonal pyramid base side 30 mm and axis 63 mm long, is resting on its base on the HP with two edges of base parallel to the VP. It is cut by a horizontal section plane passing through a point on axis 27 mm from the apex. Draw projections with the section. 07
- b) Draw the plan and elevation of a cone resting on HP on its base. Show on them, the shortest path followed by a fly moving around the cone and returning to the same starting point. Fly starts from a point on the periphery of the base. Take base diameter of cone 80 mm and height of axis 90 mm. 07
- Q-7 Attempt all questions
- a) Write any four advantages of Auto CAD. 04
- b) Draw front view, top view and left hand side view of the object shown in Figure-2 according to first angle projection method. 10



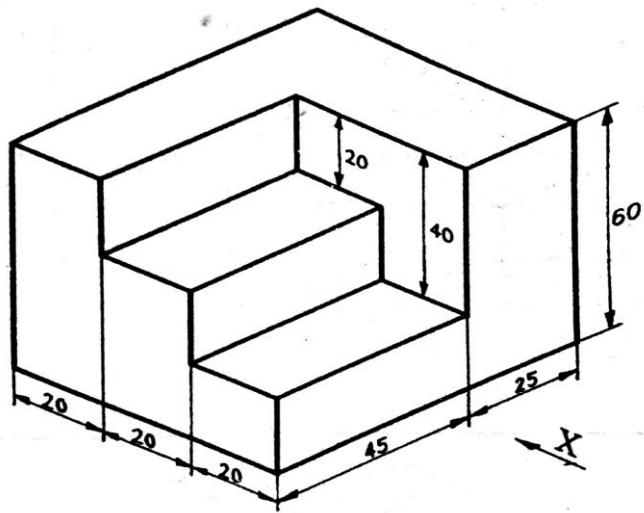


Figure-2

Q-8

Attempt all questions

- a) Explain with illustration following commands. i) Zoom ii) Break iii) Offset iv) Trim. 04
- b) Draw the isometric view of the object, the orthographic views of which are shown in the figure-3 below. 10

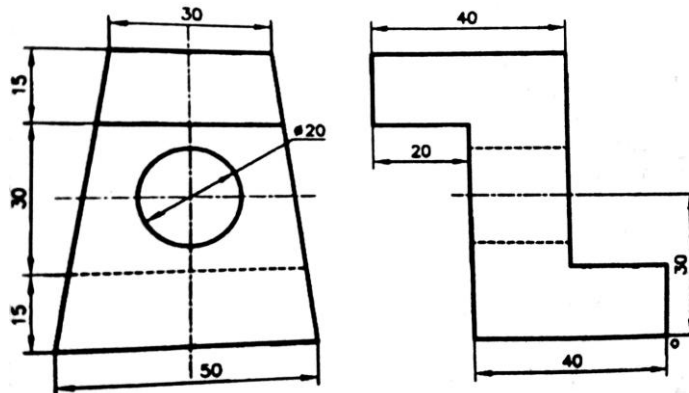


Figure-3

