

# C.U.SHAH UNIVERSITY

## Summer Examination-2018

**Subject Name :Engineering Graphics & CAD**

**Subject Code : 4TE02EGC1**

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

**Semester : 2**

**Date : 02/05/2018**

**Time : 10:30 To 01:30**

**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) Which of the following represent reducing scale? (i) 1:1 (ii) 1:2 (iii) 2:1 (iv) 10:1
- 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 following line is used for visible outlines  
(i) Continuous thick (ii) Continuous thin (iii) Chain thin line (iv) Short zigzag thin
- e) The primary unit of measurement for engineering drawings and design in the mechanical industries is the: (i) Millimeter (ii) Centimeter (iii) Meter (iv) Kilometer
- f) The dotted lines represent  
(i) Hidden edges (ii) Projection line (iii) Centre line (iv) Hatching line
- g) When the drawing are drawn smaller than the actual size of object then scale is known as  
(i) Reduced Scale (iii) Enlarged Scale (ii) Full Scale (iv) None of Above
- h) A French curve is used to draw  
(i) Circles (ii) Ellipses (iii) Smooth freeform curves (iv) Polygon
- i) When filling an area with a hatch pattern in AutoCAD the drafter needs to be able to \_\_\_\_\_.  
(i) See the entire bounding area to hatch (ii) set Ortho on (iii) turn ISO grid off (iv) set the layer to Defpoints.
- j) 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.
- k) Center lines are used to locate or represent the centers of \_\_\_\_\_. (i) arcs (ii) circles (iii) hidden round features (iv) all of the above.
- l) How can the drafter prevent AutoCAD from placing or stacking another center mark on a circle when adding a diameter dimension to it? (i) Explode the dimension and then erase the center mark. (ii) Use the Properties dialog box to turn off the center mark of the dimension. (iii) It can't be done. (iv) Use the trim tool to take away the stacked center mark.
- m) These drawings are given to contractors to perform work or manufacture individual parts: (i) Assembly details (ii) 3D drawings (iii) Working drawings (iv) Skeleton assemblies.
- n) A cylinder can be created by drawing a rectangular shape using the \_\_\_\_\_ tool.  
(i) Revolve (ii) Sweep (iii) Extrude (iv) none of the above.

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

**Q-2**

**Attempt all questions**

- a) List the application of ellipse curve
- b) What is enlarged scale? Write its applications.

04

05



- c) In following figure - 1 OBA is a simple slider crank chain. OB is a crank of 30 mm length. BA is a connecting rod of 90 mm length. Slider A is sliding on a straight path passing through point O. Draw the locus of the mid-point of the connecting rod AB for one complete revolution of the crank OB. 05

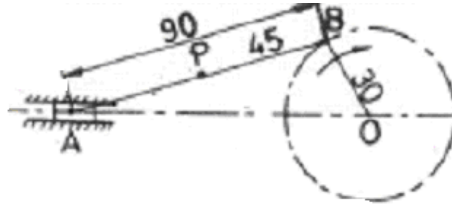


Figure-1

Q-3

**Attempt all questions**

- a) A straight line AB, 65 mm long has its end A 20 mm above H.P. and 25 mm in front of the V.P. The end B is 40 mm above the H.P. and 65 mm in front of the V.P. Draw the projections of AB. 07
- b) ABCD is a rhombus of diagonals AC = 110 mm and BD = 70mm. Its corner A is in the H.P. and the plane is inclined to the H.P. such that the plan appears to be a square. The plan of diagonal AC makes an angle of  $20^\circ$  to the V.P. Draw the projections of the plane and find its inclinations with the H.P. 07

Q-4

**Attempt all questions**

- a) A straight line AB, 50 mm long, has its end A in both the H.P. and the V.P. It is inclined at  $30^\circ$  to the H.P. and at  $45^\circ$  to the V.P. Draw its projections. 07
- b) Draw the projections of a circle 70mm diameter resting on the H.P. on a point A of the circumference. Plane is inclined to the H.P. such that the plan of it is an ellipse of minor axis 40mm. The plan of the diameter through the point A is making an angle of  $45^\circ$  with the VP. Measure the angle of the plane with the H.P. 07

Q-5

**Attempt all questions**

- a) A cone of diameter of base 45 mm and axis length equal to 50 mm rests on a point on its base circle on H.P. such that its axis is inclined at an angle of  $30^\circ$  with the H.P. and its top view makes  $45^\circ$  with the V.P. Draw the projections. 07
- b) Draw the development of the lateral surface of the part P shown in figure-2 of a pentagonal prism, a side of base parallel to the V.P. 07

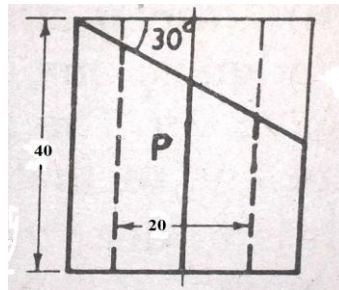


Figure-2

Q-6

**Attempt all questions**

- a) A square prism of side of base equal to 40 mm and axis height 110 mm rests on one of its corner of its base on H.P. such that the axis is inclined at an angle of  $40^\circ$  with H.P. and  $60^\circ$  with the V.P. Draw its projection. 07
- b) Draw an ellipse by concentric circle method. Size of the major and minor axes is 110 and 60 mm respectively. 07

Q-7

**Attempt all questions**

- a) Which is the output devices used in Auto CAD? Write their uses. 04
- b) Draw front view, top view and left hand side view of the object shown in Figure-3 according to first angle projection method. 10



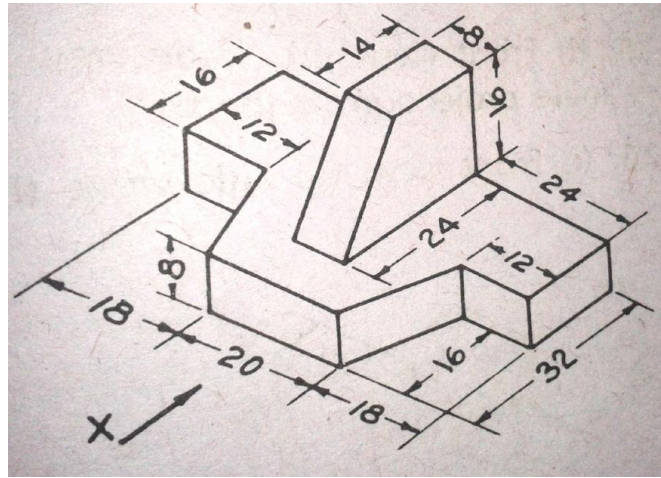


Figure-3

Q-8

Attempt all questions

- a) Explain with illustration following commands. i) Multiline ii) Circle iii) Ellipse iv) Polygon. 04
- b) Draw the isometric view of the object, the orthographic views of which are shown in the figure-4 10  
below.

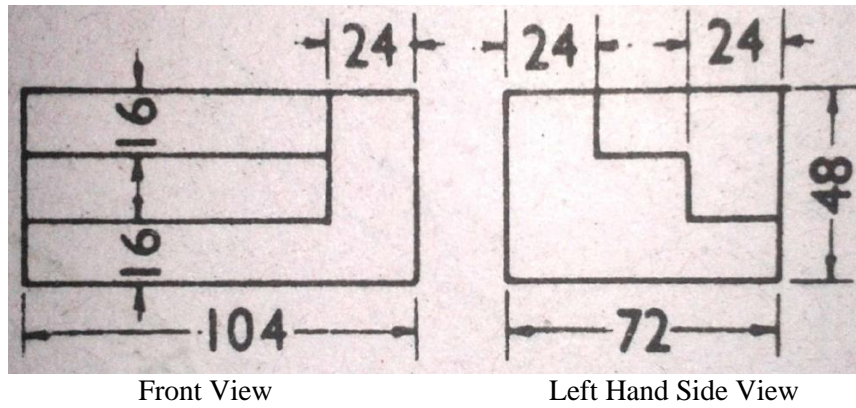


Figure-4