

# C.U.SHAH UNIVERSITY

## Winter Examination-2018

Subject Name: Engineering Graphics & CAD

Subject Code: 4TE02EGC1

Branch: B.Tech (All)

Semester: 2

Date: 29/10/2018

Time: 02:30 To 05:30

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.
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Q-1

Attempt the following questions:

(14)

- a) When the plane cuts the cone parallel to the generator, the curve traced out is  
(a) ellipse (b) parabola (c) hyperbola (d) triangle
- b) The following is not included in title block of drawing sheet.  
(a) Sheet No. (b) Scale (c) Method of Projection (d) Size of sheet
- c) Which of the following represent reducing scale?  
(a) 1:1 (b) 1:2 (c) 2:1 (d) 10:1
- d) The eccentricity of which of the following curve is greater than one?  
(a) Ellipse (b) Hyperbola (c) Parabola (d) None of these
- e) If the object lies in the fourth quadrant, its position with respect to reference plane will be  
(a) In front of V.P. and above H.P. (b) Behind V.P. and below H.P.  
(c) In front of V.P. and below H.P. (d) Behind V.P. and above H.P.
- f) When the line is parallel to VP and perpendicular to HP, we can get its true length in \_\_\_\_\_.  
(a) Top view (b) Front view (c) Side view (d) Front view & Side view
- g) Second angle projection is not used because  
(a) both views overlap each other (b) Plan is above xy  
(c) elevation is above xy (d) views are small in size
- h) In the third angle projection method, the view seen from left is placed on  
(a) Left of the Front View (b) Right of Front View  
(c) Right of Top View (d) Below Front View
- i) Length of a line 'L' in isometric projection compared to isometric drawing or view will be  
(a) 0.707 L (b) 0.815 L (c) 0.866 L (d) equal to length L
- j) The angle between isometric axis is  
(a) 30° (b) 90° (c) 120° (d) 180°
- k) A square plate of negligible thickness is inclined to HP and parallel to V.P. The front view will appear as  
(a) rhombus (b) rectangle (c) line (d) square
- l) When the cone, resting on base on V.P., is cut by section plane parallel to V.P. then the true shape is \_\_\_\_\_ and can be seen in \_\_\_\_\_ view.



- (a) Circle, Front (b) Ellipse, Front  
 (c) Ellipse, Top (d) Circle, Top
- m) A tetrahedron has \_\_\_\_ equal rectangular faces.  
 (a) 3 (b) 2 (c) 0 (d) 4
- n) Center line is  
 (a) Continuous thick line (b) Continuous thin line  
 (c) Long Chain thin line (d) Dashed line

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

**Q-2**

**Attempt all questions**

- (a) Define R.F. Construct a plain scale of R.F. 1:100 to show meters and decimeters. (04)  
 Maximum measurement required is 10 meters. Indicate 8 m 7 dm on the scale.
- (b) Define “Loci” of point. In a slider crank mechanism, the connecting rod is 160 mm and crank is 40 mm in length. The other end point of connecting rod on the slider moves along a straight line passing through centre of crank rotation. Trace the locus of midpoint ‘P’ of the connecting rod. (05)
- (c) Draw and name the curve traced by a point on the perimeter of 60 mm diameter circle if it rolls by one revolution outside the circle with 160 mm diameter. (05)

**Q-3**

**Attempt all questions**

- (a) A line AB is having its end A 10 mm, above H.P. and 30 mm in front of V.P. It is inclined at  $45^\circ$  to H.P. and  $30^\circ$  to V.P. The end B is below H.P. and behind V.P. Draw the projections of the line AB if the plan length is 80 mm. Also, find the true length of the line. (07)
- (b) A regular pentagonal plate of 50mm sides has one of its corners on HP. The plane of the pentagon is inclined at  $30^\circ$  to HP. The side of the pentagon which is opposite to the corner, which is on HP, is inclined at  $45^\circ$  to the VP. Draw the projections of the plate. (07)

**Q-4**

**Attempt all questions**

- (a) The front view of a line AB, 90mm long, measures 65mm. Front view is inclined to XY line by  $45^\circ$ . Point A is 20mm below H.P. and on V.P. Point B is in third quadrant. Draw the projections and find inclinations of line with H.P. and V.P. (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 40 mm. 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 pentagonal prism is resting on one of the corner of its base on the H.P. The longer edge containing that corner is inclined at  $45^\circ$  to the H.P. The axis of the prism makes an angle of  $30^\circ$  to the V.P. Draw the projections of the solid. Take base side 30 mm and height 60 mm. (07)
- (b) A pentagonal pyramid, side of the base 30 mm and axis 75 mm is resting on its base on the HP with one edge of base inclined at  $30^\circ$  to VP. It is cut by a section plane perpendicular to the VP, inclined at  $40^\circ$  to the HP and passing through a point on the axis 20 mm above the base. Draw the development of the surface of portion of the pyramid containing the major portion of the base. (07)

**Q-6**

**Attempt all questions**

- (a) A cone with base circle diameter 60 mm and axis length 75 mm is kept on its (07)



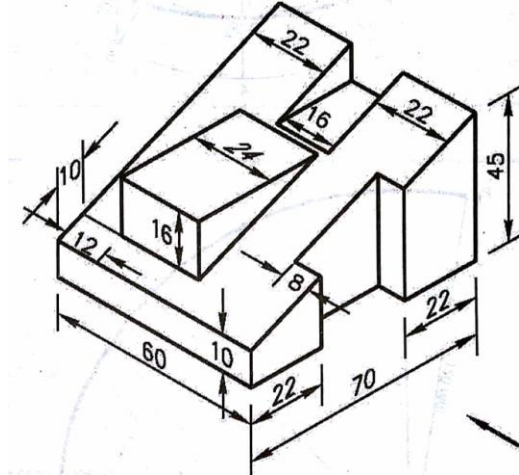
base on the ground. It is cut by a sectional plane perpendicular to HP and inclined at  $60^\circ$  to VP at a distance of 8 mm away from the top view of axis. Draw sectional elevation and true shape of the section.

- (b) Explain with illustration following commands. i) Line ii) Pline iii) Arc iv) Donut v) Zoom vi) Pan vii) Mirror. (07)

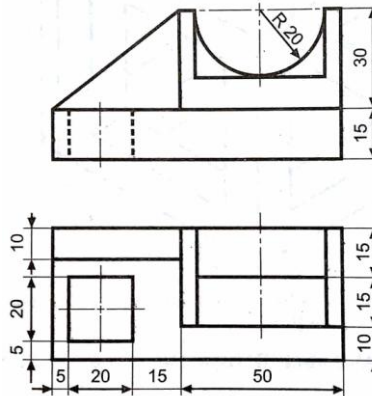
Q-7

**Attempt all questions**

- (a) Draw the front view, top view and left hand side view of the object given in figure. Use first angle projection method. (07)



- (b) Draw the isometric of machined component from the given F.V. and T.V. in figure. (07)

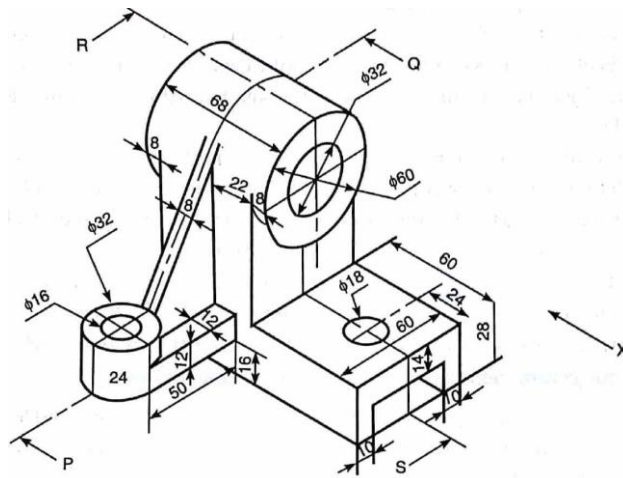


Q-8

**Attempt all questions**

- (a) Figure shows an object. Draw sectional front view along section P-Q looking in the direction of arrow X, top view and sectional left hand side view along section R-S using first angle projection method. (07)





(b) Figure shows the front view and top view of an object. Draw isometric view. (07)

