

C.U.SHAH UNIVERSITY
Summer Examination-2016

Subject Name: Engineering Graphics & CAD

Subject Code: 4TE02EGC1

Branch: B.Tech.(All)

Semester: 2

Date: 13/05/2016

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) When the drawing are drawn smaller than the actual size of object then scale is known as
 - (i) Reduced Scale
 - (ii) Full Scale
 - (iii) Enlarged Scale
 - (iv) None of Above
- b) A French curve is used to draw
 - (i) Circles
 - (ii) Ellipses
 - (iii) Smooth freeform curves
 - (iv) Polygon
- c) 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.
- 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) Center lines are used to locate or represent the centers of _____.
 - (i) arcs
 - (ii) circles
 - (iii) hidden round features
 - (iv) all of the above.
- f) 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.
- g) This is the measured size of a finished part:
 - (i) Actual size
 - (ii) Dimensioned size
 - (iii) Production size
 - (iv) Basic size.
- h) When an object is cut by a section plane parallel to H.P and perpendicular to V.P, then the sectional view of the object is obtained in
 - (i) top view
 - (ii) front view
 - (iii) left side view
 - (iv) right side view
- i) 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.
- 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) Some of the common terms used to describe technical drawing include:
 - (i) Drafting
 - (ii) Engineering Graphics
 - (iii) Engineering Drawing
 - (iv) All of the



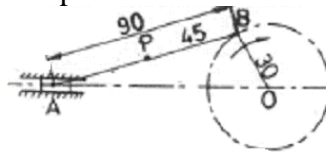
above.

- l) If a designer is developing a plan for a project in which the entire part is made out of $\frac{3}{4}$ " thick plywood and he only wants to use one view, he should use the view. (i) Front (ii) Top (iii) Right (iv) Back.
- m) A drafter who develops technical drawings of a highway overpass would most likely be a _____ drafter: (i) architectural (ii) civil (iii) mechanical (iv) process piping.
- 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

- a) Construct a plain scale of R.F. = 1:50 to show meters and decimeters and long enough up to 5 meter. Indicate 3.6 m distance on scale. 04
- b) In following figure 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



- c) Construct an Archimedean spiral of one convolution, given the maximum and minimum radii as 55mm and 31mm respectively. Draw tangent and normal to the curve. 05

Q-3

- a) The top view and front view of line CD measures 65mm and 53mm respectively. The line is inclined to H.P. and V.P. by 30° and 45° respectively. The end C is on the H.P. and 12 mm in front of V.P. Other end D is in the first quadrant. Draw the projections of the line CD. 07
- b) ABCD is a rhombus of diagonals AC = 110mm 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° to the V.P. Draw the projections of the plane and find its inclinations with the H.P. 07

Q-4

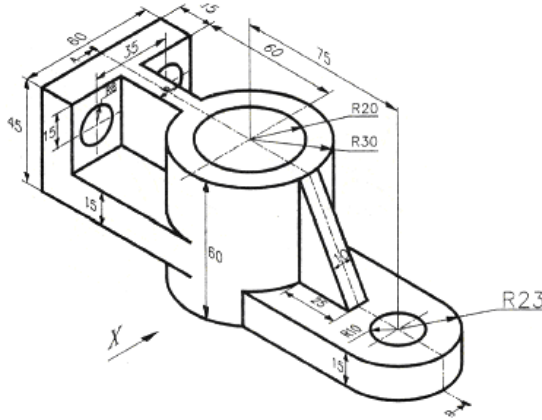
- a) A straight line AB is 60 mm long. It is inclined to H.P. and V.P. by an angle of 30° and 45° respectively. Point A is 30 mm above H.P. and 20mm in front of V.P. Draw the projections of line AB. 07
- b) Draw the projections of a circle 70mm diameter resting on the H.P. on a point A of the circumference. 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° with the VP. Measure the angle of the plane with the H.P. 07

Q-5

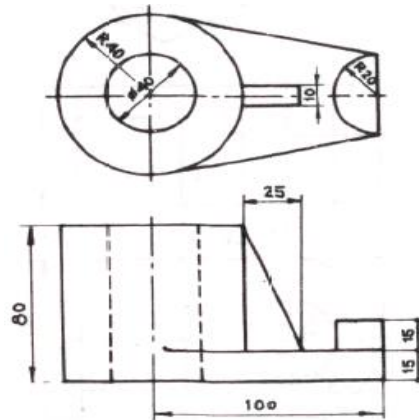
- a) The frustum of a cone, having bottom base diameter 70 mm, top base diameter 30 mm and axis 50 mm, is resting on one of its generators on the H.P. Its T.V. of axis is inclined at 30° to the V.P. Draw its projections. 07
- b) A right circular cylinder, base 50 mm diameter and axis 60 mm long, is standing on HP on its base. It has a square hole of size 25 mm in it. The axis of the hole bisects the axis of the cylinder and is perpendicular to the VP. The faces of the square hole are equally inclined with the HP. Draw its projections and develop 07



- lateral surface of the cylinder.
- Q-6 a) A hexagonal pyramid, side of base 30 mm and height 63 mm, is resting on H.P. on its base with two edges of base parallel to V.P. It is cut by a horizontal section plane passing through a point on axis 27mm from the apex. Draw the projections with the section. 07
- b) Explain with illustration following commands. i) Point ii) Line iii) Circle iv) Ellipse v) Polygon vi) Donut vii) Spline. 07
- Q-7 a) Draw front view, top view and right hand side view of the object shown in Fig. according to first angle projection method. 07

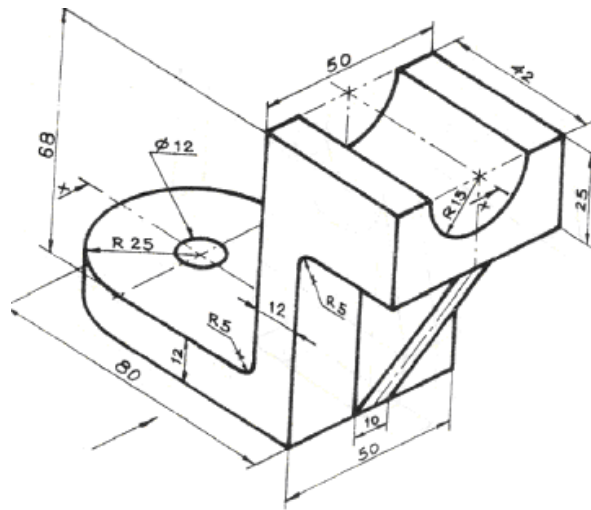


- b) Draw the isometric view of the object, the orthographic views of which are shown in the figure below. 07



- Q-8 a) Following figure shows the pictorial view of the object. Draw the sectional Front view, Top view and left hand side view using third angle method of projection. Assume the section plane to be passing through the axis of circular parts of the object. 07





- b) Draw the isometric view of the object, the orthographic views of which are shown in the figure below.

07

