1. Exercise : 9　　　　　　　　　　**2. Date:** 14/12/2020

3. Title : 3D-Part Modelling – Parametric.

4. Aim : To draw the 3D Part Modelling in Advanced Part Modelling Software.

5. Software used: Autodesk AutoCAD 2021.

6. Introduction: Advanced 3D Part Modelling Software.

- 3D Modelling = In computer graphics, 3D modelling is the process of developing a mathematical representation of any surface of an object (inanimate or living) in three dimensional space via specialized software. The product is called a 3D model. Someone who works with 3D models may be referred to as 3D artist or 3D modeler. It can be displayed as two-dimensional image through a process called 3D rendering.
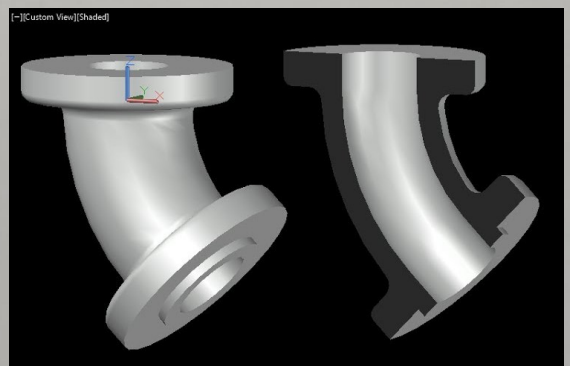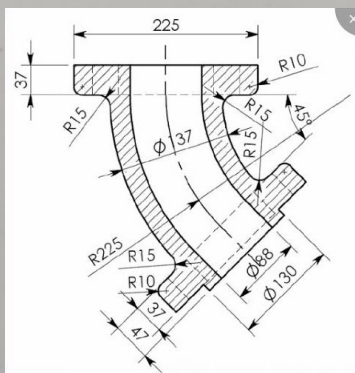
Fig. 3D-Part Sketch

Fig. 3D-Part Model

7. Procedure (for solving question #): To understand how different objects can be sectioned (imaginary cut).

   7.1 Question outline : Various 3D objects like pyramid,

   7.2 Object : cylinder, sphere, cone, etc.

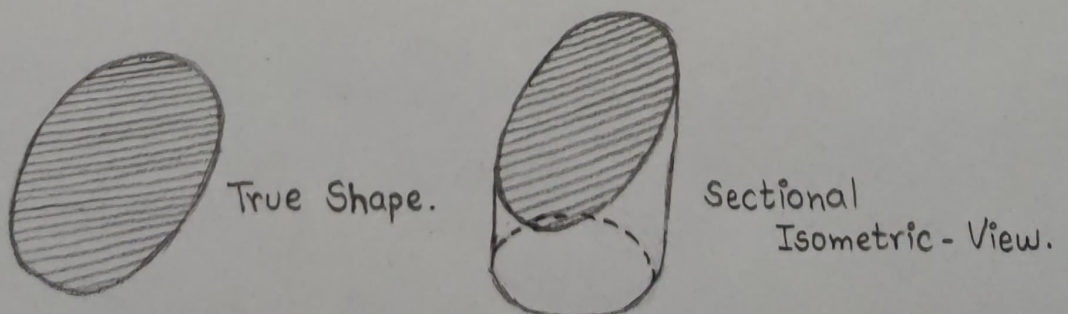True Shape.　　　　Sectional Isometric - View.

Fig. Free hand sketch of the solution to question #

7.3 Procedure:

Step 1. Draw a cylinder of given dimensions as 50mm diameter and 70mm height by using "CYLINDER" command in top view.

② Now, by moving into front view draw a line measuring 80mm above the base of cylinder using "LINE" command.

③ Again, draw a line of any measure (take 100mm) using "LINE" command inclined at an angle of 40° to HP using "ROTATE" command.

④ Move the same line to the ending point of previously drawn line. (in point ②).

⑤ By using "SECTION PLANE" command section the upward part of the figure and use GENERATE SECTION option available there and press CREATE.

⑥ In layout page, by using FULL SECTION option, draw the true shape of constructed figure and then highlight it (figure) using the "HATCH" command.

8. Commands/Tools/Features used:

S.N.	Command/Tools/Features	Use
1.	UNITS	Used to set unit-type & precision.
2.	LIMITS	Define workspace & give it boundry.
3.	ZOOM	Expand/Contract the work area.
4.	CYLINDER	Used to draw cylinder.
5.	LINE	Used to draw a line.
6.	ROTATE	Used to rotate entire object.
7.	MOVE	Used to move object to desired location.
8.	SECTION PLANE	Used to make an imaginary cut in figure.
9.	FULL SECTION	Used to draw true sphape of an object.
10.	HATCH	Used to highlight/mark a desired portion of given figure.

9. Result:

Thus, by the use of AutoCAD 2021 we are able to draw solids of desired combination and dimensions by using different sets of commands, tools, features, etc. and also able to section the plane or object/figure drawn.

Faculty Name		Date of Submission	
Signature		Marks	