

## ANSWERS TO THE THEORY QUESTIONS

1. Dash lines are used to represent sectioned surfaces.

### 2. Principles of dimensioning

Rule 1: Dimensions should not be duplicated, nor should the same info be given in two different ways

Rule 2: Dimensions should be attached to the view that best shows the contour of the feature being dimensioned

Rule 3: Wherever possible avoid dimensioning to hidden lines

Rule 4: Avoid dimensions over or through the object

Rule 5: Wherever possible locate dimensions in adjacent views

Rule 6: In general a circle is measured by its diameter circle with line through it, and arc by its radius R0.50

Rule 7: Holes are located by their centerlines, which may be extended and used as an extension line

Rule 8: Holes should be located and sized in the view that shows that feature as a circle

3. a) HALF SECTION: the cutting plane is assumed to bend at a right angle and cuts through only half of the represented object, not the full length.

When the quarter of the object that was cut is removed, the remainder is called a "half section." A half section view is effective only on symmetrical objects, and its main purpose is to show an object's internal and external construction in the same drawing.

b) FULL SECTION: the imaginary cutting plane passes through the entire object, splitting the drawn object in two with the interior of the object revealed, this is called a "full section." A full section is the most widely-used sectional view.

4. Leader lines are terminated with arrowhead

5. a) Scale= 5:1, A drawing at a scale of 5:1 means that the object is 5 times more than its original size.

b) Scale= 1:10

A drawing at a scale of 1:10 means that the object is 10 times smaller than in real life scale 1:1.

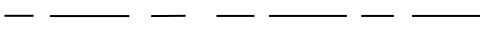
## 6. SHAPE IDENTIFICATION SYMBOLS

a) Diameter:  $\varnothing$

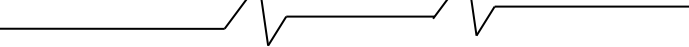
b) Radius: R

c) Square: 

d) Spherical radius: SR

ii) a.) Center line: CL or  $\Phi$  

b.) Cutting plane line: 

c.) long break: 

7. The elements to be considered while obtaining a projection are the four quadrants and the views

An Orthographic projection is a means of representing three-dimensional objects in two dimensions. It is a projection of a single view of an object (such as a view of the front) onto a drawing surface in which the lines of projection are perpendicular to the drawing surface.

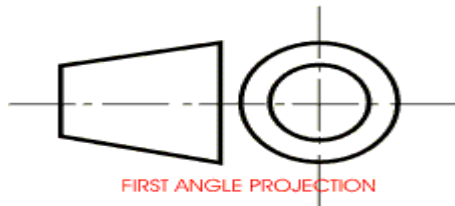
8. A projection is called an orthographic projection when the drawing consists of three different views: a front view, a top view, and a side view.

It is represented in two ways;

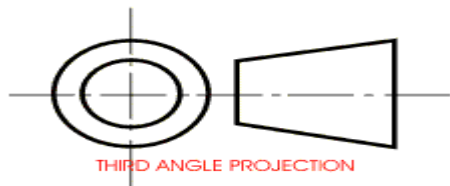
i) First angle projection

ii) Third angle projection

9) **The first angle projection**, the object is placed in the first quadrant meaning it's placed between the plane of projection and the observer.



**The third angle projection**, the object is placed below and behind the viewing planes meaning the plane of projection is between the observer and the object.



## ANSWERS TO THE OBJECTIVE QUESTIONS

1. A
2. A
3. C
4. B
5. A
6. B
7. C

8. B

9. A

10. A

11. C

12. A

13. B

14. C

15. D