ADETORO MAYOWA SOLA

ELECTRICAL/ELECTRONICS ENGINEERING

18/ENG04/005

ENG 232 ASSIGNMENT

ENGINEERING DRAWING II

Objectives

1. To project the auxiliary view, an imaginary plane known as …….
   a) Reference Plane
   b) Principle plane
   c) Normal plane
   d) Inclined plane
2. Reference plane is parallel to the direction of view
   a) True
   b) False
3. Dimension of one side of the inclined surface can be……projected on the reference plane
   a) Indirectly
   b) Equally

c) Directly

d) Normally

4. In isometric projection the three edges of an object are inclined to each other at

(a) 60° (b) 120° (c) 100° (d) 90°

5. The angle between the flanks of a metric thread is

(a) 60° (b) 90° (c) 75° (d) 55°

6. Which one among the following represents a permanent fastener

a) Nut b) Rivet c) Screw d) Bolt

7. The convexity provided on the rim of the solid web cast iron pulley is called

a) Bending b) Curving c) Crowning d) Riveting

8. Section lines are generally inclined with the base, at an angle of

a) 30° b)45° c)60° d)90°

9. The isometric view of a sphere is always

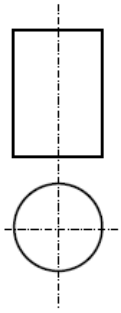
a) a circle b) an ellipse c) a Parabola d) a Semicircle

10. In isometric projection, the four center method is used to construct

a) an ellipse b) a square c) a triangle d) a rectangle

11. cylinder

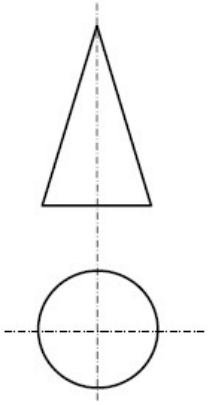
(i) With respect to the elevation and plan given below, name the solid



(a) Cone
(b) hexagonal prism
(c) cylinder
(d) hexagonal pyramid

12. CONE

(v) With respect to the front view and top view given below, name the solid



(a) Cone
(b) Cylinder
(c) Cube
(d) Frustum

13. A footstep bearing is a

a) journal bearing b) thrust bearing c) pivot bearing d) pedestal bearing

14. The angle between the flanks of B.S.W. thread is

a) 60° b) 65° c) 55° d)75°

15. Top view is projected on the

a) Vertical Plane b) Corner Plane c) Side Plane d) Horizontal Plane

THEORY

1. How do you represent a sectioned surface on a drawing?
    - First of all, it is important to understand that a sectioned surface is one which has the cutting plane. Therefore, a sectioned surface is represented by hatching lines. These are thin lines that are inclined at 45 degrees to the horizontal and are evenly spaced. For the same object, every part is for the hatched with same type of lines at 45 degrees and equal spacing but for assembly objects, a principle known as reverse hatching is introduced. Therefore, the direction of the hatch lines change as one gets to a different part.

      N/B: section lines are very light.
2. List out the various principles to be followed while dimensioning a drawing.
    - All dimension, extension, and leader lines should be thin, sharp, dark lines(.5mm/ 2H).
    - Extension lines indicate the points between which the dimension figure apply. They are drawn perpendicular to the dimension lines, start with a visible gap (1/32") between them and the object, and terminate 1/8" (3.2mm) beyond the last arrowhead.
    - Each dimension should be terminated by arrowheads touching the extension lines and pointing in opposite directions. Arrowheads are drawn freehand with .7mm/HB lead. The line should be broken only at the approximate center for the dimension figures.
    - Dimensions shown with dimension lines and arrowheads should be placed to be read from the bottom of the drawing (unidirectional system).

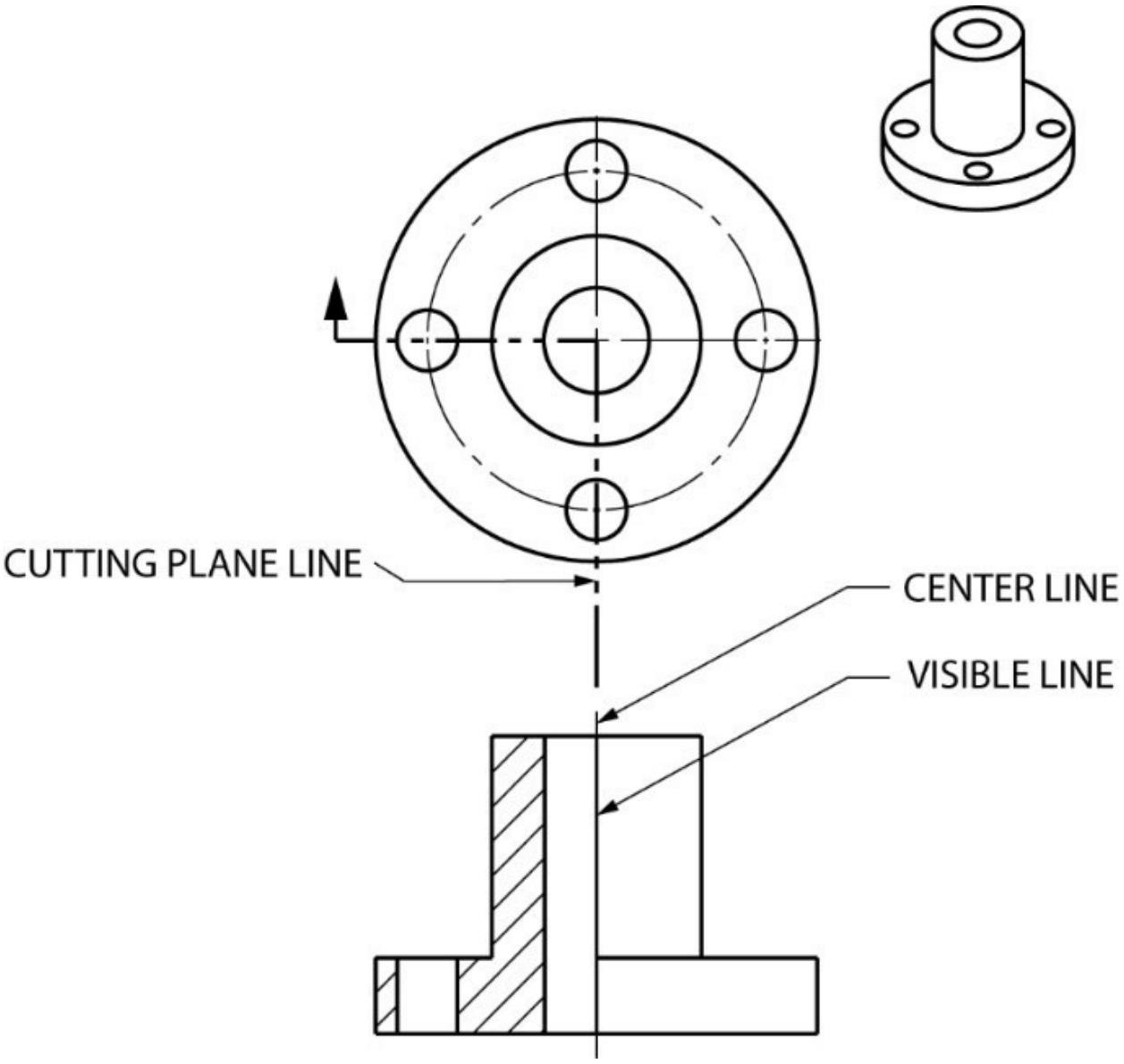
- All dimensions should be given in decimal format. When dimensions are given in inches, leading zeros are omitted from dimension values less than 1.00
- When all dimensions on a drawing are given in inches, the inch marks (") are omitted, the same applies to millimeters. If metric units are used, the word METRIC will appear boxed in a spot toward the lower portion of the drawing sheet.
- A dimension line should never coincide with an object line or a center line, nor should it be an extension of these lines. Both, however, may be used as extension lines.
- Crossing of extension lines or dimension lines should be avoided if possible. Where such crossings are unavoidable, there should be no break in either of the lines. However, if extension lines cross dimension lines through the arrowheads, the extension line may be broken.
- Dimensions are preferably placed outside the outlines of the views.
- Lettering (notes) should always be placed horizontal on the page, to be read from the bottom of the drawing (.7mm HB).

3. Explain the terms, (*a*) half section, (*b*) Full section

Half section

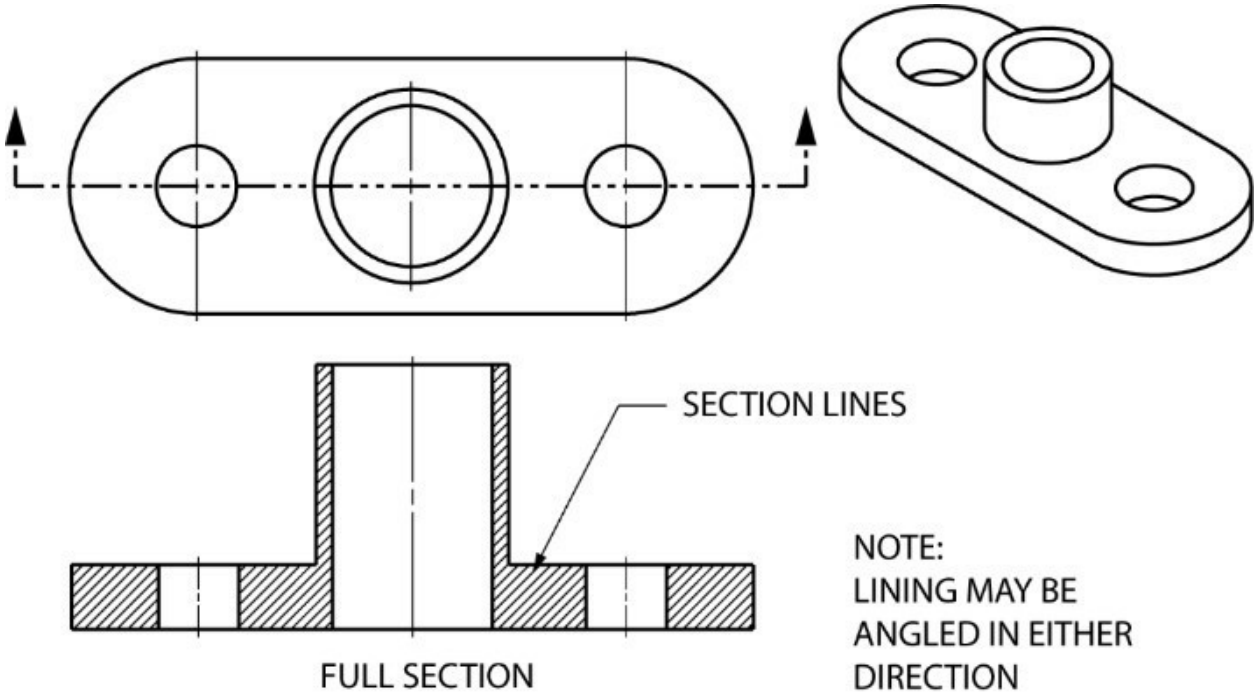
In this view, the cutting plane is assumed to bend at a right angle and cuts through only half of the represented object, not the full length. When the quarter of the object that was cut is removed, the remainder is called a “half section.” A half section view is effective

only on symmetrical objects, and its main purpose is to show an object's internal and external construction in the same drawing.



Full section.

If 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 "a full section." A full section is the most widely-used sectional view.



4. How are leader lines terminated?

   • Leader lines are used to indicate where dimensions or notes apply and are drawn as thin continuous lines and they are terminated with **arrow heads**

5. What do you understand by, (a) scale = 5:1 and (b) scale = 1:10?

   • scale 5:1; this is multiplying the actual size of the drawing by 5 therefore increasing the size

   • scale 1:10; this is multiplying the actual size of the drawing by 1/10 therefore decreasing the size.

6. Give the shape identification symbols for the following: (a) diameter, (b) radius, (c) square and (d) spherical radius. (a)Centre line, (b) cutting plane line and (c) long break

   • Diameter: Ø

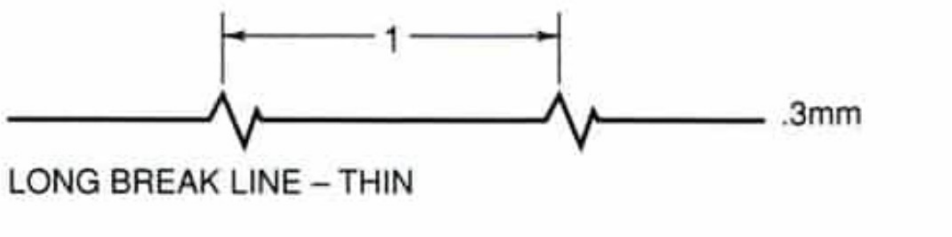
• Radius: R

• Square: □

• Spherical radius: SR

• Centre line: —–——–——–——–——–——-

• Cutting plane line: 



- Long break

7. What are the elements to be considered while obtaining a projection and what is an orthographic projection?

   • An orthographic projection is a means of representing three dimensional objects with two dimensional drawings. The elements are the front view, side view and plan view

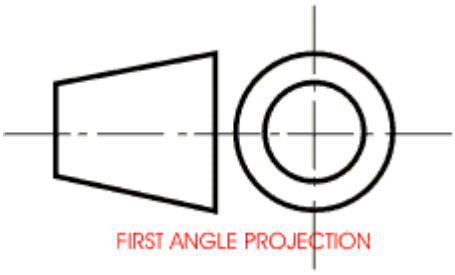
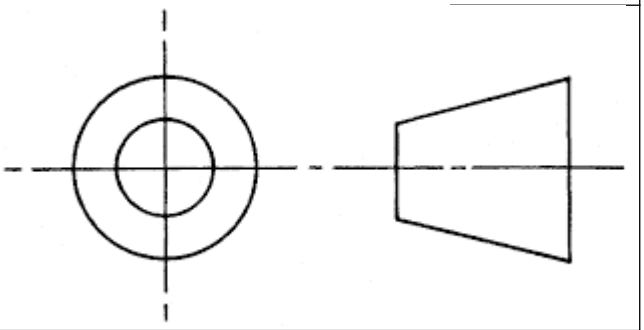
8. When is a projection of an object called an orthographic projection?

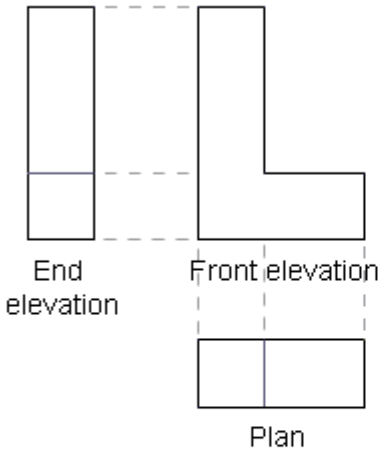
   • The projection of an object is called an orthographic projection when the front view, side view, and the top view have been specified, which can either be drawn in first angle projection or third angle projection.

9. Explain the following, indicating the symbol to be used in each case: (a) First angle projection, (b) Third angle projection

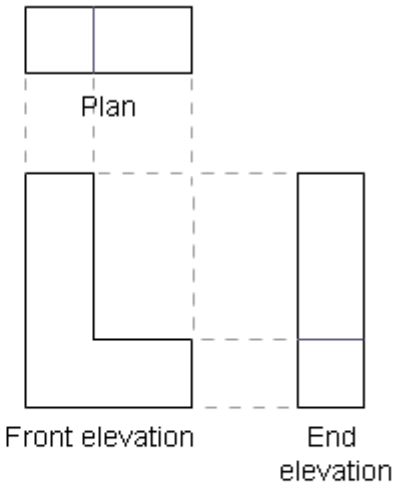
- First angle projection: In first angle projection, the object is supposed to be placed in the first quadrant. The plane of projection is believed to be opaque. In this projection, the object is positioned in front of the vertical plane and above the horizontal plane.

- Third angle projection: In third angle projection, the object is supposed to be placed in the third quadrant. The plane of projection is believed to be transparent. In this projection, the object is positioned behind the vertical plane and below the horizontal plane.

Projection	Symbols
First angle	
Third angle	



First Angle Projection



Third Angle Projection