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MATRIC NUMBER: 18/ENG02/095

DEPARTEMENT: COMPUTER ENGINEERING

ENG 232 ANSWERS

1. How do you represent a sectioned surface on a drawing?

A cutting plane line is used to represent a sectioned surface on a drawing. A cutting plane is represented on a drawing by a cutting plain line. This is a heavy long-short-short-long kind of line terminated with arrows. The arrows in show the direction of the view

2. List out the various principles to be followed while dimensioning a drawing.

- No unnecessary dimensions should be used
- In general, a circle is dimensioned by its diameter, an arc by its radius.
- Dimensions should not be duplicated
- Dimension should not be placed on the object
- Avoid dimensioning to hidden lines
- Never cross dimension lines
- Dimension lines should never coincide with an object line or center line
- Always dimension the actual size of the object - not the scaled size.
- All dimension lines should be thin, sharp dark lines
- Holes should be located by their center lines.

3. Explain the terms.

Half section & Full section

(a) **Half section:** A **half-section** is a view of an object showing one-**half** of the view in **section**. The diagonal lines on the **section drawing** are used to indicate the area that has been theoretically cut. Its main purpose is to show an object's internal and external construction in the same drawing. It is frequently used for symmetrical objects

(b) **Full section:** A full section is when the cutting plane line passes entirely through an object. When the imaginary cutting plane passes through the entire object and it splits the drawn object in two with the interior of the object revealed.

4. How are leader lines terminated?

Leader lines are terminated with;

- a) with a dot,
- b) with an arrow head,
- c) without dot or arrow head,

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


scale = 5:1: In my understanding a drawing at a scale of 5:1 means the drawing/object is 5 times less/smaller than its original size/original scale of 1:1

scale = 1:10: In my understanding a drawing at a scale of 1:10 means that the drawing/ object is 10 times less/smaller than its original size / original scale of 1:1

6. Give the shape identification symbols for the following:

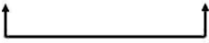
a) Diameter: Φ


b) Radius: R

c) Square: 

d) Spherical radius: S Φ

e) Centre line : CL or Φ

f) cutting plane line : 

g) long break : 

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

a) Elements to be considered while obtaining a projection

- Dimensions which are parallel to the direction of viewing will not be seen.
- Edges which are parallel to the direction of viewing are seen as points.
- The visible edges and the intersection of the surfaces are shown by object lines. But the hidden edges are shown by dotted lines.

b) An orthographic projection

An orthographic projection is representing a three dimensional object in a two-dimensional drawing. It shows different views of a structure. It contains the vertical and the horizontal planes.

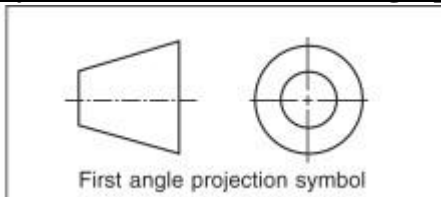
8. When a projection of an object is called an orthographic projection?

A projection of an object is said to be an orthographic projection when it contains three views of the object: the front, plan and side view

9. Explain the following, indicating the symbol to be used in each case:

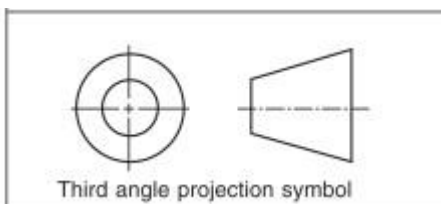
- (a) **First angle projection:** is a method in orthographic drawing that the object is placed in the first quadrant and is positioned in front of the vertical plane and above the horizontal plane. Here the plane of the projection is assumed to be transparent

Symbol to be used in first angle projection



- (b) **Third angle projection:** is a method in orthographic drawing that the object is placed in the third quadrant and is positioned behind the vertical plane and below the horizontal plane. Here the plane of projection is assumed to be non – transparent.

Symbol to be used in third angle projection



Objectives

1. Reference Plane
2. False
3. Directly
4. 120
5. 60
6. Rivet
7. Crowning
8. 45
9. A circle
10. An ellipse
11. Cylinder
12. A cone
13. Pivot bearing
14. 55
15. Horizontal Plane