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19/ENG01/024
CHEMICAL ENGINEERING
   T.D Assignment

1) How do you represent a sectioned surface on a drawing?
   You represent a sectioned surface on a drawing using the Section lining. They are saw marks found in most sectional views indicating the surface has been exposed by the cutting plane. They are very light and are drawn by eye at an angle 45° degrees and are spaced about 1/8 apart.

2) List out the various principles to be followed while dimensioning a drawing.
   Dimensioning should be done so completely that further calculation or assumption of any dimension, or direct measurement from the drawing is not necessary

   Every dimension must be given, but none should be given more than once

   A dimension should be placed on the view where its use is shown more clearly

   Dimension should be placed outside the views, unless they are clearer and more easily read inside.

   Mutual crossing of dimension lines and dimensioning between hidden lines should be avoided.

   Dimension lines should not cross any other line of the drawing

   An outline or a centre line should never be used as a dimension line. A centre line may be extended to serve as an extension line

   Aligned system of dimension is recommended.

3) Explain the terms (a) half section (b) full section

Half Section

   If the cutting plane is passed halfway through an object, and one-quarter of the object is removed, the resulting section is a half section. A half section has the advantage of showing both inside and outside configurations. It is frequently used for symmetrical objects.

Full section

   When a cutting plane line passes entirely through an object, the resulting section is a full section. It is possible in full section to section an object whenever a close look intentionally is desired. The cutting plane line passes through the entire object, splitting the drawn object into two with the interior of the object revealed.

4) How are leader line terminated?

A leader line is a line that establishes a connection between a graphical representation of an item and some text. The leader line should be a continuous thin line that can be terminated using 4 types of terminators. The terminators are closed filled or closed blank, dot and Tick
The terminatorse are   ↤ closed filled ✓   or

Closed filled   ◄—————

Dot   o—————

Tick   ╱—————

5) What do you understand by (a) scale = 5:1

Scale 5:1 means we are enlarging a drawing 5 times more than its original size eg if the measurement is 30mm. we multiply by 5 to give 150mm. A 150mm line is drawn.

Scale 1:10 means we are reducing a drawing 10 times less than its original size eg if the measuremet is 100mm then we divide by 10 to give 10mm. A 10mm line is drawn.

6) Shape Identification Symbols

a) Diameter → ∅   Centre line → — · — · —

b) Radius → R   Cutting plane line → ↑——↑

c) Square → □   long break → —√—

d) Spherical radius → SR

7) What are the elements to be considered while obtaining a projection and what is an orthographic projection? The elements include (a) Object (b) plane of projection (c) an observer.

Orthographic projection is a type of parallel projection in which the four orthogonal views of an object are shown.

8) When is a projection of an object called an orthographic projection

When the projectors are parallel to each other and also perpendicular to the plane then the projection is called orthographic projection.

9) Explain the fig indicating the symbol to be used in each case (a) First angle (b) Third angle projection

First Angle Projection

In this projection, the object lies between the observer and the plane of projection. It is a method of creating a 2D drawing of a 3D object.
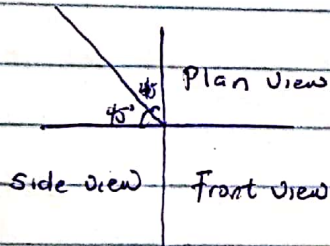
Symbol

| Side view | Front view |

Plan view
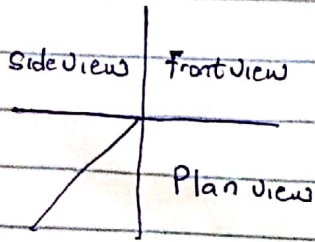
Third Angle Projection

It is a method of orthographic projection which is a technique in protraying a 3D design using a series of 2D views. The plane of projection lies between the observer and the object. The plane of projection is assumed to be transparent.

Symbol

45°

Plan view

| Side view | Front view |

OBJECTIVE

1) To project the auxillary views, on imaginary plane known as   Ans: (A) Reference

2) Reference plane is parallel to the direction of view   Ans: (B) False

3) Dimension of one side of the inclined surface can be directly projected on the reference plane

4) Dimension are represented   Ans: (c) directly

4) In isometric projection the three edges of an object are inclined to each other at   Ans 60°

5) The angle between the flanks of a metric thread is   Ans: (A) 60°

6) Which one among the following represents a permanent fastner   Ans: RIVET

7) The convexity provided on the rim of the solid web cast iron pulley is called   Ans: C CROWNING

8) Section lines are generally inclined with the base at an angle of   Ans:(B) 45°

9) The isometric view of a sphere is always   Ans: (A) CIRCLE

10) In isometric projection, the four centre method is used to construct   Ans: ELLIPSE (A)

11) 6. CYLINDER (C)

12) CONE (A)

13) A footstep bearing is a   THRUST BEARING (B)

14) The angle between the flanks of B.S.W. thread is   55° (C)

15) Top view is projected on the ?   Ans HORIZONTAL PLANE (D)