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MATRIC NO: 18\ENG05\052

DEPARTMENT: MECHATRONICS

1. How do you represent a sectioned surface on a drawing? When drawing a sectioned surface, you sketch the object as it would look as if it were cut apart from the cutting plane. Section lining would be shown on the surface which has been exposed to the cutting plane.

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

They are;

- a. Dimensions should not be duplicated nor given in 2 different ways.
- b. Dimensions should be attached to the view that best shows the contour of the feature being dimensioned.
- c. Avoid dimensioning hidden lines.
- d. When dimensioning, use the same dimension lines all through
- e. Dimension lines should be 10mm away from the drawing.

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

Full section, this is when the imaginary cutting plane passes through the object splitting the drawn object into two with the interiors revealed.

Half Section; the cutting plane is assumed to bend at a right angle and cut only through half of the represented object. The remainder is called a half section.

4. How are leader lines terminated? Leader lines are terminated with
 - a. An arrow terminator; is used to point to an edge of an item

b. A dot terminator; is used to point to a face

c. The Architectural tick; can be used for referring to multiple parallel edges.

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

A 5:1 scale shows that anything drawn with a size "5" would be a size "1" in the real world, so a measurement of 10mm on the drawing would be a 2mm in the real world.

A scale of 1:10 shows anything drawn with the size of "1" would have a size of "10" in the real world, so a measurement of 150mm on the drawing would be 1500mm on the world.

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

φ: Diameter R : Radius SR : Spherical radius

▪ : Square.

Center 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 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.

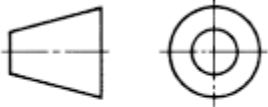
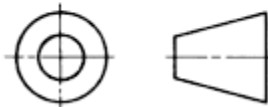
Elements to consider:

8. When is a projection of an object called an orthographic projection? When you are projecting a single view/ face of the object.
9. Explain the following, indicating the symbol to be used in each case: (a) First angle projection, (b) Third angle projection

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

In the third angle projection, for 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.

SYMBOLS.

Projection	Symbol
First angle	
Third angle	

Objectives

1. To project the auxiliary view, an imaginary plane known as **PRINCIPLE PLANE**
 - a) Reference Plane
 - b) Principle plane

c) Normal plane

d) Inclined plane

2. Reference plane is parallel to the direction of view

✓ True

False

3. Dimension of one side of the inclined surface can be **DIRECTLY** 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°

ANS: A

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

(a) 60° (b) 90° (c) 75° (d) 55°

ANS: A

6. Which one among the following represents a permanent fastener

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

ANS: B

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

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

ANS: C

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

a) 30° b) 45° c) 60° d) 90°

ANS: C

9. The isometric view of a sphere is always

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

ANS: B

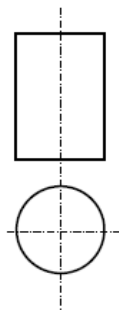
10. In isometric projection, the four center method is used to construct

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

ANS: A

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

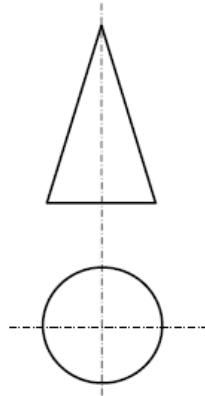


- (a) Cone
- (b) hexagonal prism
- (c) cylinder
- (d) hexagonal pyramid

Answer: C (CYLINDER)

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



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

ANSWER A. (CONE)

13. A footstep bearing is a

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

ANS: A

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

- a) 60° b) 65° c) 55° d) 75°

ANS: C

15. Top view is projected on the

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

ANS: A