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DEPARTMENT: BIOMEDICAL ENGINEERING
COURSE CODE: ENG232
COURSE TITLE: ENGINEERING DRAWING II

ENG 232 QUESTIONS AND ANSWERS

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

When sketching an object or part that requires a sectional view, they are drawn at an angle of approximately 45 degrees, and are spaced about 1/8 apart. Since they are to set off a section, they must be drawn with care. It is best to use the symbol for material being shown as a section on a sketch.

2. List out the various principles to be followed while dimensioning a drawing.
 - As far as possible, dimensions should be placed outside the view.
 - Dimensions should be taken from visible outlines rather than from hidden lines.
 - Dimensioning to a centre line should be avoided except when the centre line passes through the centre of a hole.
 - Each feature should be dimensioned once only on a drawing.
 - Dimensions should be placed on the view or section that relates most clearly to the corresponding features.
 - Each drawing should use the same unit for all dimensions, but without showing the unit symbol.
 - No more dimensions than are necessary to define a part should be shown on a drawing.
 - No features of a part should be defined by more than one dimension in any one direction.

- **The dimensions should be legibly and intelligibly written.**
- **The extensions and dimensions should not cut in any case.**
- **The dimensions should be given on sure a view which illustrates the true size and shape of the object.**

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

- **Half section**: This is fully known as Half sectional views and they are used when an object is symmetrical (the same on either side of the centre line). One half is used as a sectional view to show the outside as well as the other to show the inside. The cutting plane removes a quarter of the object.
- **Full section**: This happens when the cutting plane is right across the object resulting to a full sectional view.

4. How are leader lines terminated?


Leader lines should terminate

- a) **with a dot, if they end within the outlines of an object,**
- b) **with an arrow head, if they end on the outline of an object,**
- c) **without dot or arrow head, if they end on a dimension line.**

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

- a) **Means a 50mm line is to be drawn to scale of 5:1.**
- b) **It means that the object is ten times smaller than in real life.**

6. Give the shape identification symbols for the following:

- a. Diameter, \varnothing
- b. Radius, R
- c. Square
- d. Spherical radius, SR
- e. Centre line: Chain lines 

f. Cutting plane line: Chain thin, thick at ends and changes of direction



g. 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 common way or method of representing three-dimensional objects, usually by three two dimensional drawings: the top view, front view and one side view (front and side elevation) in each of which the object is viewed along perpendicular lines that are perpendicular to the plane of the drawing.

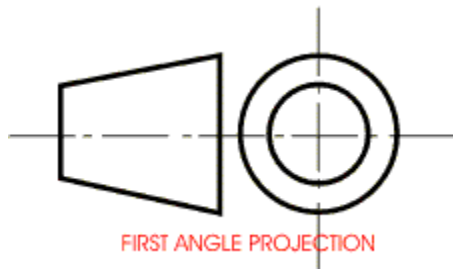
8. When is a projection of an object called an orthographic projection?

Typically, an orthographic projection drawing consists of three different views: a front view, a top view, and a side view. Occasionally, more views are used for clarity. The side view is usually the right side, but if the left side is used, it is noted in the drawing.

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

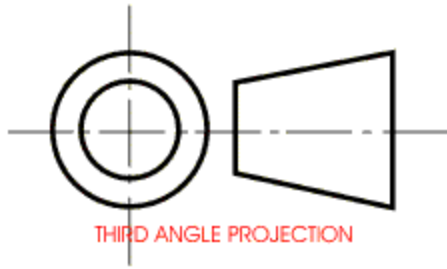
(a) First angle projection,

This is a method of creating a 2D drawing of a 3D object.



(b) 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.



Objectives

- To project the auxiliary view, an imaginary plane known as
 - Reference Plane**
 - Principle plane
 - Normal plane
 - Inclined plane
- Reference plane is parallel to the direction of view
 - True
 - False**
- Dimension of one side of the inclined surface can be.....projected on the reference plane
 - Indirectly
 - Equally
 - Directly**
 - Normally
- In isometric projection the three edges of an object are inclined to each other at
 - 60°
 - 120°**
 - 100°
 - 90°
- The angle between the flanks of a metric thread is
 - 60°**
 - 90°
 - 75°
 - 55°
- 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

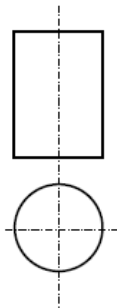
a) a circle b) an ellipse c) a Parabola d) a Semicircle

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

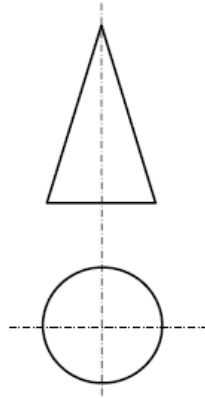
(b) hexagonal prism

(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**