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MAT NO: 18/ENG04/066

DEPT: ELECT/ ELECT

THEORY ANSWERS

(1) **A SECTIONED SURFACE** can be represented on a drawing through the front view, plan, and side view of the sectioned object required or draw.

(2) PRINCIPLES TO BE FOLLOWED WHEN DIMENSIONING A DRAWING

- . Never cross extension lines
- . Dimensions should not be duplicated, have the same information represented in two different ways
- . Unnecessary dimensions are not allowed
- . Dimensions should be placed at finished surfaces or important center lines
- . A center line may be extended, and used as extension line
- . Wherever possible avoid dimensioning to hidden lines
- . Holes are located by their center lines, which may be extended, and used as an extension line
- . Holes should be located, and sized in the view that shows that feature as a circle
- . A circle is dimensioned by its diameter, an arc by its radius
- . A dimension should be attached to only one view
- . Always dimension the actual size of the object, not the scaled type
- . Extension lines start approximately 1/6" from the object, and extend 1/8" past the last dimension
- . Avoid dimensioning to hidden lines wherever possible
- . Dimensions should be attached to the views that best shows the shape of the feature to be dimensioned

(3) **(a) HALF SECTION:** Half section is used to the exterior, and interior of the part in the same view. 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.

(b) FULL SECTION: Full section is described as an imaginary cutting plane that passes through the entire object, splitting the drawn object in two with the interior of the object revealed. The cutting line passes entirely through an object, and the resulting section is a full section.

(4) **Leader lines** are thin, solid lines that terminate in an arrow head or dot. Arrow head is used when leader lines terminate at the outline, and Dot is used when leader lines terminate within the outline. Leader lines are terminated in three different ways. They are constructed in such a way that there are no

- . No crossing lines
- . No excessively long leaders
- . No leaders are parallel to dimension or extension lines

(5) . **Scale= 5:1:** This scale falls under a type of example called scaling up. It means that the line meant to be drawn to scale is 5 times more than its original size.

. **Scale= 1:10:** This scale falls under a type of example called scaling down. It means that the line meant to be drawn to scale is 10 times less than its original size

(6) SHAPE IDENTIFICATION SYMBOLS

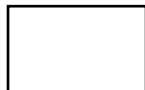
(a) Diameter



(b) Radius

R

(c) Square



(d) Spherical Radius

(e) Center line

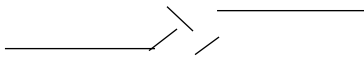


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(f) Cutting plane line

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(g) Long break

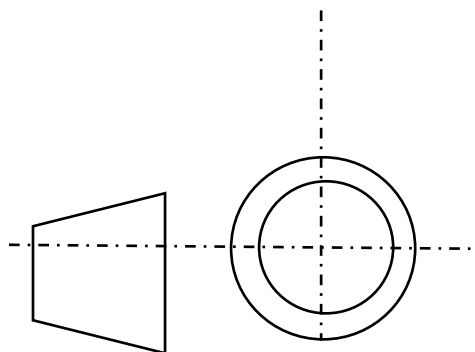


(7) A projection must have a front view, top view, and side view. Orthographic projection is a means of representing three dimensional objects in two dimensions. It is a form of parallel projection, in which all the projection lines are orthogonal

(8) The projection of an object is called orthographic projection if the projection is a parallel projection, in which all the projection lines are orthogonal to the projection plane.

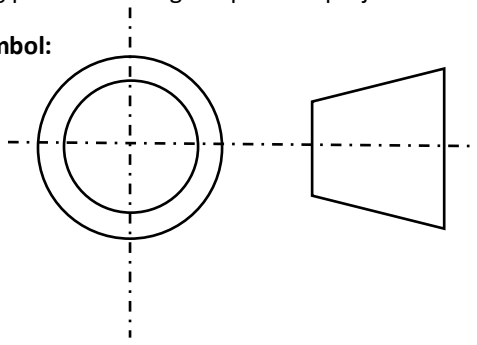
(9)(a) First angle projection: In this projection, the object is placed in the first quadrant meaning its placed between the plane of projection, and the observer

Symbol:



(b) Third angle projection: In this projection, the object is placed below, and behind the viewing planes meaning the plane of projection is between the observer, and object

Symbol:



OBJECTIVES ANSWERS

- (1) (A) REFERENCE PLANE
- (2) (B) FALSE
- (3) (C) DIRECTLY
- (4) (B) 120
- (5) (A) 60
- (6) (B) RIVET
- (7) (C) CROWNING
- (8) (B) 45
- (9) (A) A CIRCLE
- (10) (A) AN ELLIPSE
- (11) (C) CYLINDER
- (12) (A) CONE
- (13) (D) PEDESTAL BEARING
- (14) (C) 55
- (15) (D) HORIZONTAL PLANE