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MAT NO: 18/ENG08/012

DEPT: BIOMEDICAL ENGINEERING

TITLE: ENGINEERING DRAWING ASSIGNMENT (ENG232)

ANSWERS TO OBJECTIVE QUESTIONS

- 1) A. reference plane
- 2) B. false
- 3) C. directly
- 4) B. 120degrees
- 5) A. 60degrees
- 6) B. rivet
- 7) C. crowning
- 8) B. 45degrees
- 9) A. a circle
- 10) A. an ellipse
- 11) C. cylinder (fig1)
- 12) A. cone (fig2)
- 13) A. journal bearing
- 14) C. 55degrees
- 15) D. horizontal plane

ANSWER TO THEORY QUESTIONS

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

ANSWER

Sectioning is the dividing or cutting of objects to give the viewer further details of the interior of said object.

A section of an object is produced by cutting an object by an imaginary plane, removing one or more parts and thus revealing a view of the effects of the dissection. They are represented by a cut on the drawing elevations (plan, front, end) usually with long-short dashes line (a section plane).

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

ANSWER

- The dimensions should be given on such view which illustrates the true shape and size of an object.
- As far as possible the dimensions should be given outside a view but can be given inside as well if unavoidable.
- All the dimensions are given in group form. Scattering of these is not correct.
- The dimensions should be intelligibly written.
- All the dimensions should be written parallel to the object line and the numbers should be written such that they could be read easily.
- The dimensions should not be repeated unless necessary.
- The unnecessary dimensions should be avoided.
- The extension and dimension lines should not intersect in any case.
- While giving dimension after completing a drawing, it should be kept in mind that no unit should be written with any number.
- The numbers should be clear, legible, and intelligible.
- The circle, arcs, and wholes should be compatible with their radius or diameter.
- If dimensions are needed to be given in concentric circles, then try to make them on the front view and then

write their dimensions.

- The Leader Line should be used for writing dimensions of the circles which should illustrate their diameters.
- As far as possible, on a drawing, dimensions should be expressed in one unit only, preferably in millimeters, without showing the unit symbol (mm). Unit on the drawing, however, may be shown in a note
- Dimensions should be represented from the visible outlines, rather than from hidden lines.

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

ANSWER

a) A half-section is a view of an object showing one-half of the view in section. The diagonal lines on the section drawn are used to indicate that they have been cut (theoretically)

b) A full section is a view of an object when a cutting plane line passes entirely through an object.

4. How are leader lines terminated?

ANSWER

Leader lines are terminated with arrow heads.

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

ANSWER

Scale 5:1 implies multiplying the actual size of the drawing by 5.

Therefore increasing the size.

Scale 1:10 implies multiplying the actual size of the drawing by 1/10. Therefore decreasing the size.

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

ANSWER

- Diameter: $\varnothing$
- Radius: R
- Square: $\square$
- Spherical radius: SR
- Centre line: - - - - -
- Cutting plane line: _____
- Long break: _____

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

ANSWER

An orthographic projection is a means of representing three dimensional objects with two dimensional drawings.

The elements to be considered while obtaining a projection are the front view, side view and plan view.

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

ANSWER

A projection of an object called an orthographic

projection when the figure is drawn in first or third angle elevation having in mind that an Orthographic projection is a way of representing a 3-dimensional object in 2-dimension.

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

case: (a) First angle projection, (b) Third angle projection

ANSWER

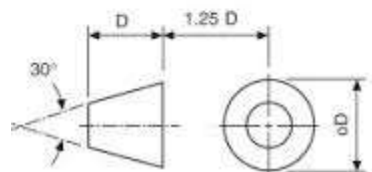
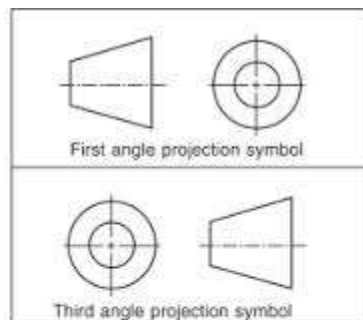
First angle projection is a way of showing a 3D object on

a 2D piece of paper, and it shows what a part looks like

from each direction - top, bottom, left right; While the

third angle projection is the opposite.

In first angle projection, the object is placed in between the plane of projection and the observer (front view is placed in the 1st quadrant). While in third angle projection, the plane of projection is placed in between the object and the observer (front view is placed in 3rd quadrant).



1st Angle & 3rd Angle Pojection		
Projection	Symbol	
First angle		
Third angle		