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DEPT: CHEMICAL ENGINEERING

MAT NO: 18/ENG01/014

COURSE: ENGINEERING DRAWING II

ASSIGNMENT TITLE:

QUESTION 1: How do you represent a sectioned surface on a drawing?

Sectioned surface can be represented with lines which look like saw marks called sectioned lining. They are found on most sectioned views, and indicate the surface which has been exposed by cutting plane.

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

1. Dimension are narrow and continuous lines 0.35mm thick.
2. Dimensions should be placed outside drawing
3. Arrowhead should be approximately triangular, must be uniform size and shape and in every case touch the dimension line to which they refer.
4. Arrowhead drawn manually should be filled in.
5. Bearing in mind the size of the actual dimensions and the fact that there may be two numbers together where limits of size are quoted, then adequate space must be left between rows of dimensions and a spacing of about 12mm is recommended.

6. Centre lines must never be used as dimension lines but must be left clear and distinct. They can be extended, however, when used in the role of projection lines.
7. Dimensions are quoted in millimeters to the minimum number of significant figures.
8. To enable dimensions clearly, figures are placed so that they can be read from the bottom of the drawing.

QUESTON 3: Explain the following terms

a) Half section

b) Full section

a. Half section: it is a view of an object showing one-half of the view in section. The cutting plane is assumed to bend at a right angle and cuts through only half of the represented object, not the full length. When the quarter of the object that was cut is removed, the remainder is called a “half section.” a half section view is effective only on symmetrical objects, and its main purpose is to show an object’s internal and external construction in the same drawing.
b. Full section: if the imaginary cutting plane passes through the entire object, splitting the drawn object in two with the interior of the object revealed, this is called a “full section.” A full section is the most widely-used sectional view.

QUESTION 4: How are leader lines terminated?

Leader lines can be terminated by using an arrowhead, dothead, tick head terminators.

QUESTION 5: What do you understand by,

a. Scale = 5:1

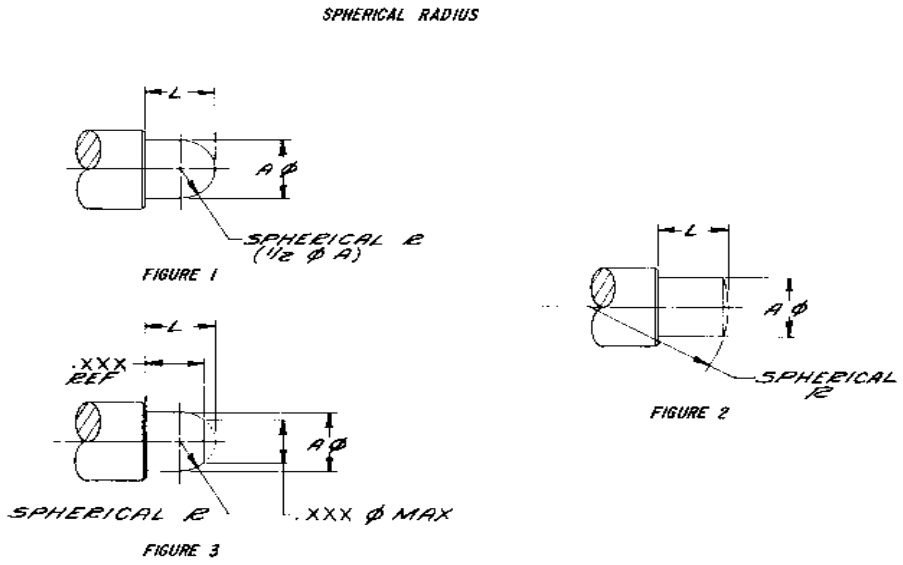
b. Scale = 1: 10

a) Scale = 5:1; this is an enlargement scale. It means that for 1mm should be multiplied by 5 while drawing that is 2mm= 5*2=10mm
b) Scale = 1:10;this is a reduction scale. It means that for 10mm should be taken as 1mm while drawing that is 20mm= 20/10 = 2mm

QUESTION 6: Give the shape identification symbols for the following:

a) Radius
b) Diameter
c) Square
d) Spherical radius
e) Centre line
f) Cutting plane line
g) Long break

a. Radius : symbol for radius is "R"
b. Diameter : symbol for diameter is "Ø"
c. Square : symbol for square is "□"
d. Spherical radius: symbol for spherical radius is "Ø"



e. Centre line:

f. Cutting plane line:

g. Long break line:

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

It is a way of drawing a 3D object from different directions. Usually so that a person looking at the drawing can see all the important sides. Orthographic drawings are useful especially when a design has been developed to a stage whereby it is almost ready to manufacture. Orthographic involves three views: the front, the side and the plan.

QUESTION 8: When is a projection of an object called an orthographic

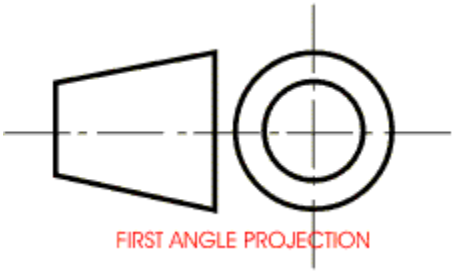
projection?

If the projection from the object are perpendicular to the projection plan, then such a projection of the object is known as orthographic projection.

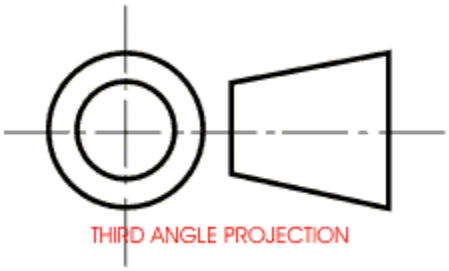
QUESTION 9: Explain the following, indicating the symbol to be used in case:

a. First angle projection
b. Third angle projection

a) First angle projection: it is a method of creating a 2D drawing of a 3D object. On the drawing paper the front view and the side view is drawn at the top while the plan view is drawn at the bottom under the front view.



b) Third angle projection: it is a method of creating a 2D drawing of a 3D object. On the drawing paper the front view and the side view is drawn at the bottom while the plan view is drawn at the top of the front view.



Objectives

1. To project the auxiliary view, an imaginary plane known as …….

   a) Reference Plane

   b) Principle plane

   c) Normal plane

   d) Inclined plane

   ANSWER: A- reference plane

2. Reference plane is parallel to the direction of view

   a) True

   b) False

   ANSWER: False

3. Dimension of one side of the inclined surface can be……projected on the reference plane

   a) Indirectly

   b) Equally

   c) Directly

d) Normally

ANSWER: C- directly

4. In isometric projection the three edges of an object are inclined to each other at

(a) 60^o (b***) 120^o*** (c) 100^o (d) 90^o

ANSWER: B- 120

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

(a)***60^o*** (b) 90^o (c) 75^o (d) 55^o

ANSWER: A- 60

6. Which one among the following represents a permanent fastener

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

ANSWER: B- Rivet

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

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

ANSWER: C- Crowning

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

a) 30^o b) ***45^o*** c)60^o d)90^o

ANSWER: B- 45

9. The isometric view of a sphere is always

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

ANSWER: B –an ellipse

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

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

ANSWER: A- an ellipse

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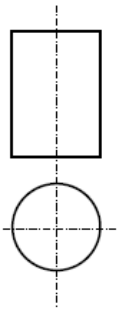
(i) With respect to the elevation and plan given below, name the solid



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

ANSWER: A- cone

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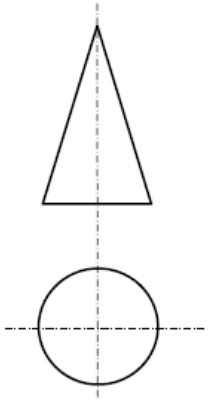
(v) With respect to the front view and top view given below, name the solid



(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

ANSWER: B- thrust bearing

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

a) 60^{o} b) 65^{o} c) ***55^{o}*** d) 75^{o}

ANSWER: C- 55

15. Top view is projected on the

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

ANSWER: D- horizontal plane