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MATRIC; 19/ENG06/064

DEPT; MECHANICAL ENGINEERING

COURSE; ENG 232 (ENGINEERING DRAWING)

Question 1; How do you represent a sectioned surface on a drawing;

Answer; you represent a sectioned surface by hatching with thin sectioned lines[continuous] uniformly spaced and inclined at 45^{o}

Question 2; list out the various principles to be followed while dimensioning a drawing;

Answer;

- Dimensions lines should be a thin continuous line
- Use the same type of arrow head to terminate the dimension line
- Use a leader or a pointer [thin continuous line] to connect a note or a dimension figure
- Dimensions should be placed near the middle and above/un-top the dimension line (that is using the aligned system) OR dimension lines are broken near the middle and dimensions are placed
- All dimensions should be in millimeter (mm) and if otherwise, it should be stated
- Dimensions lines should be drawn at least 8mm away from the outlines and from each other and the right conventional symbol should be placed for the right dimensions e.g Ø20

Question 3; Explain the term full section and half section

Answer;

Full section; this is when the cutting plane passes completely through the object with all visible- edges behind the plane shown

Half section; this is when the cutting plane passes half of the object or the view of an object showing one-half of the view in section

Question 4; How are Leader lines terminated.

Answer; Leader lines are terminated with either an arrow head or a dot. The arrow head touches the outline, while the dot is placed within the outline of the object

Question 5; What do you understand by (a) Scale 5:1 (b) Scale 1:10

Answer;

Scale 5:1; it means that the drawing was magnified 5 times the original drawing

Scale 1:10; it means that the drawing is 10 times smaller than the original drawing.

Question 6; Give the shape identification symbols for the following

Answer;

Diameter = Ø, D, Dia

Radius = R

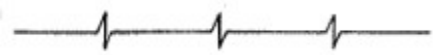
Square ⊠

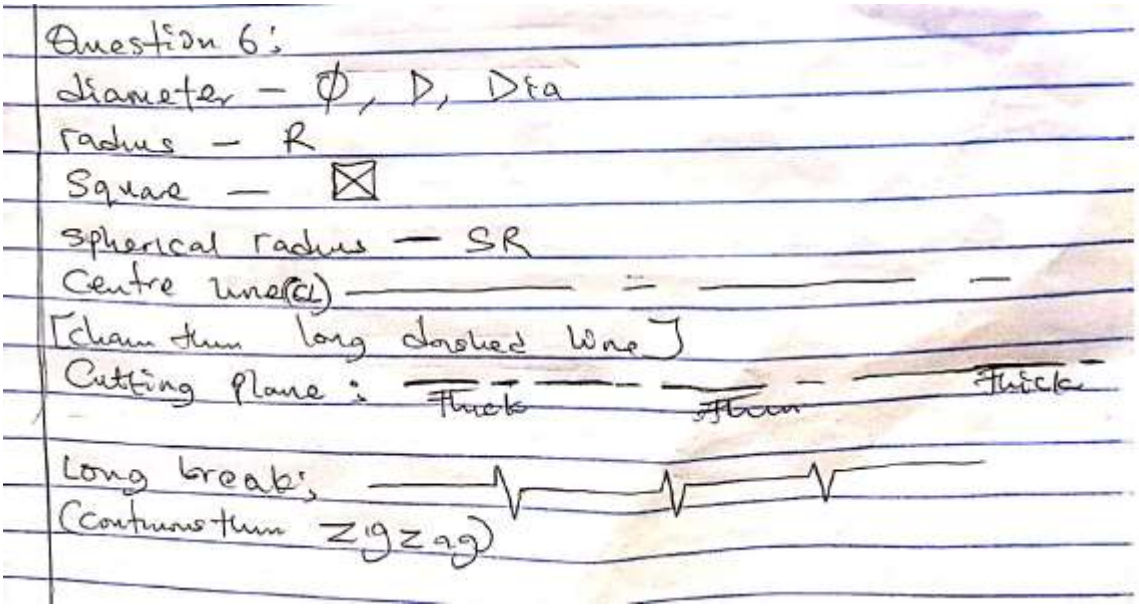
Spherical radius; SR

Centre Line: ——————— ——— ———————

Cutting plane

Long break





Question 7; what are the elements to be considered will obtaining a projection and what is an orthographic projection

Answer;

Elements are;

- Hidden details
- Direction/position of view [whether from left/right]
- Edges

Orthographic projection; This is when an object is represented by two or three views on the mutual perpendicular projection planes that is Front view, side/end view, top/plan view. The projection lines are parallel to each other and perpendicular to the plane

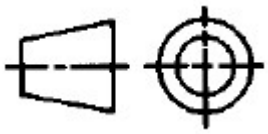
Question 8; When is the projection of an object called an orthographic projection

Answer; when a projection is called orthographic is when the projection lines/projectors are parallel and normal to the plane

Question 9;

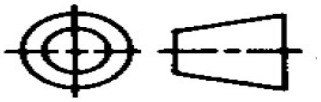
Answer;

First angle projection; This is when the Front elevation/view is above the plan, and whatever is viewed from the left goes to the right and vice versa.

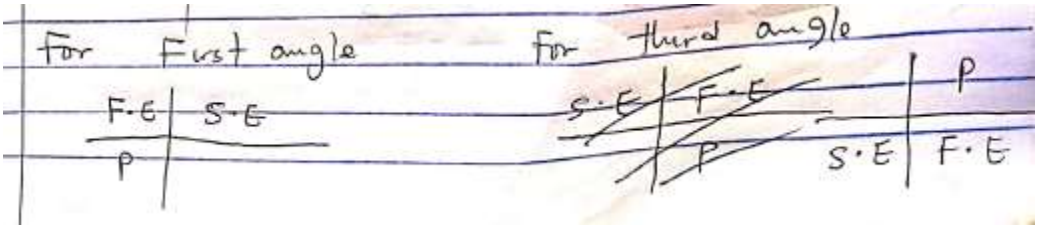


Symbol for first angle projection

Third angle projection; This is when the plan is above the front elevation/view and whatever is viewed from the left/right remains at the left/right



Symbol for third angle projection



OBJECTIVES

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

Answer; **reference plane (a)**

Question 2; Reference plane is parallel to the direction of view

Answer; **False (b)**

Question 3; Dimensions of one side of the inclined surface can be …….. projected on the reference plane

Answer; **Directly (c)**

Question 4; in isometric projection the three edges of an object are inclined to each other at

Answer; **120º (b)**

Question 5; The angle between the flanks of a metric thread is

Answer; **60º (a)**

Question 6; Which one among the following represents a permanent fastener

Answer**; Rivet (b)**

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

Answer**; Crowning (c)**

Question 8; Section lines are generally inclined with the base at an angle of

Answer; **45º (b)**

Question 9; The isometric view of a sphere is always

Answer; **Circle (a)**

Question 10; In isometric projection, the four-center method is used to construct

Answer; **Ellipse (a)**

Question 11

Answer; **Cylinder (c)**

Question 12

Answer; **Cone (a)**

Question 13; A footstep bearing is a

Answer; **Thrust Bearing (b)**

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

Answer; **55º (c)**

Question 15; The top view is projected on the

Answer; **Horizontal plane (d)**