

## Objectives

- 1) A
- 2) A
- 3) C
- 4) B
- 5) A
- 6) B
- 7) C
- 8) B
- 9) A
- 10) A
- 11) C
- 12) A
- 13) C
- 14) C
- 15) D

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BIOMEDICAL  
ENGINEERING

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 by eye at an angle of approximately 45 degrees, and are spaced about 1/8 apart. Since they are used 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.

- **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 extension and dimension lines should not intersect in any case.**

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

**Half Section :** Half sectional views are used when an object is symmetrical (the same either side of the centre line). One half is used as a sectional view to show the inside and the other half shows the outside view.

The cutting plane only removes a quarter of the object.

**Full Section :** When the cutting plane is right across the object it results in a full sectional view (commonly referred to as a full section)

4. How are leader lines terminated?

**Leader lines are terminated by the use of arrow heads.**

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

- **Means a 50mm line is to be drawn at a scale of 5:1**
- **This scale means that the object is 10 times smaller than in real life.**

6. Give the shape identification symbols for the following: (a) diameter, (b) radius, (c) square and (d) spherical radius. Centre line, (b) cutting plane line and (c) long break

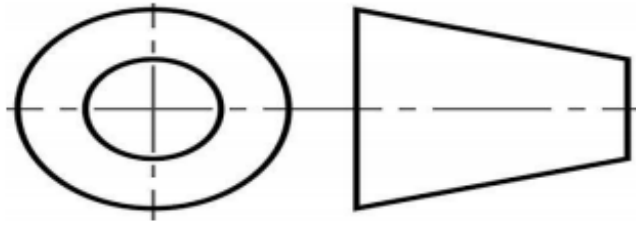
7. What are the elements to be considered while obtaining a projection and what is an orthographic projection?

**An orthographic projection is a common method of representing three-dimensional objects, usually by three two-dimensional drawings in each of which the object is viewed along parallel lines that are perpendicular to the plane of the drawing. For example, an orthographic projection of a house typically consists of a top view, or plan, and a front view and one side view (front and side elevations).**

**It should comply with relevant standards (such as British Standards) to prevent misunderstanding and avoid errors in interpreting the drawing.**

8. Explain the following, indicating the symbol to be used in each case: (a) First angle projection, (b) Third angle projection

- **First angle projection is a method of creating a 2D drawing of a 3D object.**



- **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.**

