**ED viva question-answers**   
   
Q1– Name the principal planes of projections.   
Ans1:-There is two planes employed for projection and are known as reference planes or principle planes of  
projections. These planes intersect at right angles to each other. These are    
1) Vertical plane: - The plane which is vertical is called vertical plane and is denoted by V.P. Vertical plane is   
also known as Frontal Plane as front view is projected on this plane.     
2) Horizontal plane:-The plane which is horizontal and at right angle to the V.P is called Horizontal Plane and   
it is denoted by H.P.  

Q2 – What is apparent section?   
Ans2:- The projection of the section on the plane to which it is inclined is called as apparent section. 

Q3 – What is true section?   
Ans3:- The projection of the section on a plane parallel to the plane will show the true shape of the section. 

Q4 – What do you understand by V.T. and H.T. of section plane?   
Ans4 – Horizontal trace (H.T) – H.T. of a section plane is a line in which the plane meets the H.P.    
Vertical trace (V.T.) – V.T. of a section plane is a line in which the plane meets the V.P.  

Q5 – What do you mean by Frustum?   
Ans5 – When the section plane is parallel to the base plane of a cone or pyramid, it will form a frustum. 

Q6 – What do you mean by truncated?   
Ans6 – When the section plane is inclined to the base plane of a solid, it will form a truncated. 

Q7 – Why the projections of an object is not drawn in second and fourth quadrants?   
Ans7 – The projections of an object is not drawn in second and fourth quadrants because the overlapping will  
take place. It will become very difficult to understand the views. 

Q8 – When the auxiliary planes are used?   
Ans8 – The auxiliary planes are used in order to view the true shape of an inclined surface. The projection   
drawn on the auxiliary plane is known as the auxiliary view and gives the true shape of the inclined surface.  

Q9 – What are the types of auxiliary planes?   
Ans9:-The plane placed at any angles to the principle planes is called auxiliary plane. Auxiliary planes are of   
two types.   
1) Auxiliary vertical plane (A.V.P.):-It is perpendicular to the HP and inclined to the VP. Projection on an   
AVP is called auxiliary front view.   
2) Auxiliary inclined plane (A.I.P.):-It is perpendicular to the VP and inclined to the HP. Projection on   
AIP is called auxiliary top view.  

Q10 – What is the trace of a straight line?   
Ans10:-When a straight line is inclined to a plane, it will meet that plane, produced if necessary. The point in   
which the line or line produced meets the plane is called its trace.   
1) Horizontal trace:-The point of intersection of the line with the HP is called the horizontal trace.   
2) Vertical trace:-The point of intersection of the line with the VP is called the vertical trace.

Q11 – What are the types of planes?   
Ans11:-There are two types of planes.   
1) Perpendicular planes:-The planes which are perpendicular to one or both the reference i.e. VP and HP are   
called perpendicular planes.   
2) Oblique planes:-The planes which are inclined to both the reference planes i.e. VP and HP are called oblique   
planes.   

Q12 – What is the trace of a plane?   
Ans12:-The lines in which the planes meet the reference planes i.e. HP and VP are called the traces of the   
planes. There are two types of traces of planes.   
1) Horizontal trace:-The intersection of a plane with the horizontal plane is called the horizontal trace.   
2) Vertical trace:-The intersection of a plane with the vertical plane is called the vertical trace.

Q13 – What are the apparent angles of inclinations?  
Ans13 – The angle made by the front view of a line with reference line (x-y line) is called apparent angle of   
inclination α. The angle made by the top view of a line with reference line (x-y line) is called apparent angle of   
inclination β.   
   
generation of cone  
Imagine a vertical line, and a second line intersecting it at some angle f (phi). We will call the vertical line the axis, and the second line the generator. The angle f between them is called the vertex angle.