HW
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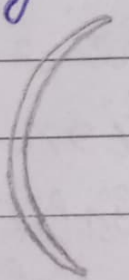
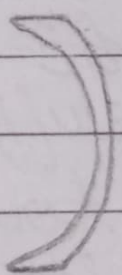
Home Assignment
Light : Reflection & Refraction

1. Differentiate between concavo-convex lens and convexo-concave lens. (Two points)

Ans-

concavo-convex lens	convexo-concave lens
• It is thinner at outer boundary while thicker at middle.	• It is thinner at middle and thicker at outer boundaries
• In concavo-convex lens, the radius of convex surface is lower than concave surface.	• In convexo-concave lens, the radius of convex surface is higher than concave surface.
• Image :- 	• Image :- 
concavo-convex lens	convexo-concave lens

2. What is the reason behind the sparkling of a diamond?

Ans- Diamonds have the highest refractive index which makes their critical angle least due to which the light ray entering diamond goes through multiple internal reflection causing shining of diamond.

3. In which case the converging will be more, Bi-convex or Plano-convex? Justify.

Ans- A lens is a combination of prisms. When a ray of light passes through a prism it suffers two refractions- one at point of incidence and another at point of emergence. In both the cases it bends towards the base of the prism.

i) In a bi-convex lens the rays of light suffer two refraction and bend more towards the principal axis and they focus very near to the optical centre. But in a plano-convex lens

the rays suffer only one refraction and their bending towards the principal axis is some what less and they focus at a point far from the optical centre.

ii) So the focal length of bi-convex lens is shorter than the focal length of plano-convex lens.

So, converging is more in bi-convex lens as compared to the plano-convex lens.

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