

**Grade : VIII Chapter- 17: Refraction and Dispersion of prism**

**c.**

1. The bending of light as it passes from one transparent medium to another is called refraction. It is because light travels at lowest speed in an optically denser medium.

Light bends towards the normal at the point of incidence as it passes from an optically rarer to an optically denser medium.

1. Refraction occurs because of the difference in speed of light in different mediums.

7. The least distance at which the eye can see an object clearly is called the near point whereas the far point of the eye is the maximum distance at which it can see clearly.

D.

1. Displacement by a rectangular glass slab:

(i) A glass slab causes a ray of light to be laterally displaced after refraction through it.

(ii) Emergent ray is parallel to the incident ray but laterally displaced from it.

(iii) No spectrum forms here.

Deviation by a glass prism

1. A prism causes an incident ray to be deviated from its path by an angle called the angle of deviation.
2. The emergent ray is deviated from the incident ray.
3. Deviation of light through a glass prism causes to form spectrum.

2. The splitting up of white light into its constituent colours is called dispersion. The patch of coloured light obtained due to dispersion through a glass prism on the screen is known as a spectrum.

A glass prism splits white light into its constituent colours because of deviation. Different colours of light are deviated by different amounts. Hence the colours separate out on emerging from the prism.

HOTS:

1. While entering a glass slab, different coloured lights bend by different amounts. However, on emerging from the slab, the lights bend in the opposite direction and emerge parallel to the initial direction.
2. A glass slab does not cause dispersion as the emergent ray emerges parallel to the incident ray and there is no bending of light.
3. The apparent depth of the pool will be greater than the real depth if the swimming pool is filled with an imaginary liquid which is optically rarer than air. This will happen because rays of light from any point of the floor of the pool refract towards the normal as they emerge from a rarer to a denser medium.
4. When rays of light coming from a point on the object diverge after reflection or refraction, a virtual image is formed.
5. No. It is a light of single colour. So, it will not be splitted up to form a spectrum.