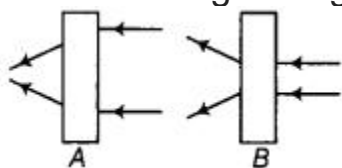


Grade : VII Chapter -16: Light

Question 1:

Observe the given figures carefully.



The given figures show the path of light through lenses of two different types represented by rectangular boxes A and B. What is the nature of lenses A and B?

Answer:

Since, in first case light rays are converging towards a point, so the lens A will be convex and in case of lens B, light rays diverge or spread out. So, the lens will be concave lens.

2. Name the colours include in the composition of sunlight.

Answer:

As we know that sunlight consists of mixture of seven colours (i.e. VIBGYOR).

3. In the formation of a rainbow, what acts as tiny prisms?

Answer:

In the formation of a rainbow, the raindrops suspended in the atmosphere acts as tiny prism.

4. Explain why are concave and convex mirrors called spherical mirrors.

Answer:

Concave and convex mirrors are the parts of sphere whose one side is polished or silvered. So, they are called spherical mirrors.

5. Is it possible to obtain the image on the screen when the candle is too closed to the concave mirror?

Answer:

No, when the candle is too closed to the concave mirror.

6. Can you get a real image at any distance of the object from the convex mirror?

Answer:

No, we cannot get a real image for any position of an object from the mirror because convex mirror always forms virtual, erect and diminished image in spite of the position of object.

7. Name the phenomenon that is involved in the formation of image of an object by a concave mirror.

Answer:

Reflection of light is the name of a phenomenon which is involved in the formation of image of an object by a concave mirror.

8. Briefly tell that how many reflected rays can be obtained from a single incident ray in respect of a plane mirror.

Answer:

For a single incident ray, there will be only one reflected ray that can be obtained in respect of a plane mirror.

9. The distance between an object and a convex lens is changing. It is noticed that the size of the image formed on a screen is decreasing. Is the object moving in a direction towards the lens or away from it?

Answer:

In case of convex lens, when we move the object far away from the lens, the size of image decreases and ultimately, when object is at infinity, it will form a point image at focus.

10. Two different types of lenses are placed on a sheet of newspaper. How will you identify them without touching?

Answer:

On identifying the letters of newspaper, we can differentiate the two types of lenses.

If image is large or magnified, then the lens is a convex lens and if the image is smaller or diminished in size for all the positions of object, then the lens is concave .

11. The side mirror of a scooter got broken. The mechanic replaced it with a plane mirror. Mention any inconvenience that the driver of the scooter will face while using it.

Answer:

As we know that the side mirror of a scooter must be of convex mirror so that we can view a wide range of traffic spread over a large area. But if

plane mirror is used, we are not able to see large area of traffic which may be difficult for driving vehicle and can cause accident.

12. Mention the type of image

- (a) which can be formed on the screen.
- (b) which cannot be formed on the screen.

Answer:

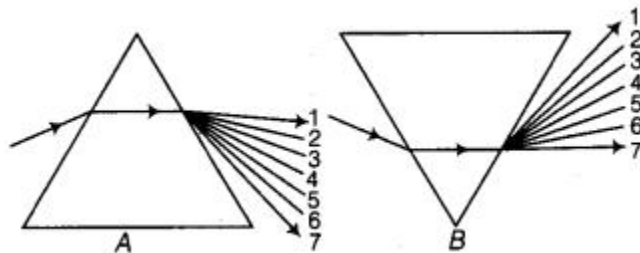
- (a) The image which can be formed on the screen is real image.
- (b) The image which cannot be formed on the screen is virtual image.

13. Mention any two letters of English alphabet whose image formed in a plane mirror appears exactly similar to the letters.

Answer:

Since, image formed by the plane mirror shows lateral inversion, i.e. left seems to right or vice-versa. But in the case of alphabets A and H, these letters show the same image in the plane mirror.

14. State the correct sequence (1-7) of colours in the spectrum formed by the prisms A and B shown in the figure.



Answer:

When a white light is passed through a prism, it disperses into its seven constituent colours.

For A

- 1. → Red
- 2. → Orange
- 3. → Yellow
- 4. → Green
- 5. → Blue
- 6. → Indigo
- 7. → Violet

For B

- 1. → Violet
- 2. → Indigo
- 3. → Blue
- 4. → Green
- 5. → Yellow
- 6. → Orange
- 7. → Red

15. State the characteristics of images formed by a concave mirror.

Answer:

The characteristics of image formed by a concave mirror are:

- The image formed by a concave mirror is not always the same size as the object. It can be either larger or smaller depending on the distance of the object to the mirror.
- The image formed by a concave mirror is inverted when the object is kept far from the mirror. So, when it is brought very close to the concave mirror, then an erect and enlarged image is formed.

16. You are given three mirrors of different types. How will you identify each one of them?

Answer:

We can identify the mirrors by forming image of an object.

- Plane mirror : In case of plane mirror, image will be virtual, erect and of same size as that of object.
- Concave mirror : In case of concave mirror, image may be real, virtual and magnified or diminished.
- Convex mirror : In case of convex mirror, image formed will always be virtual, erect and diminished.

17. Namit was driving a car and suddenly became aware of a loud sound coming from behind. He looked through his rear view mirror and saw an ambulance. He recalled reading that such emergency vehicles often have their name written in the mirror (AMBULANCE) or writing, i.e. **AMBULANCE**.

He quickly made way for the ambulance, murmuring a quick prayer for the speedy recovery of the patient inside the ambulance.

- (a) Name the type of mirror which is used as a rear view mirror and why?
 (b) Mention values did Namit exhibit. (Value Based Question]

Answer:

- (a) Convex mirror is a mirror which is used as a rear view mirror. It is used to get a wide view of traffic behind.
 (b) The values exhibit by Namit here is courtesy concerned for other, sympathy, knowledgeable.

