

**CBSE Class–VII Science**  
**NCERT Solutions**  
**CHAPTER-15**  
**LIGHT**

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**Question 1.** Fill in the blanks:

- (a) An image that cannot be obtained on a screen is called -----.
- (b) Image formed by a convex ----- is always virtual and smaller in size.
- (c) An image formed by a ----- mirror is always of the same size as that of the object.
- (d) An image which can be obtained on a screen is called a ----- image.
- (e) An image formed by a concave ----- cannot be obtained on a screen.

**Answer:** Fill in the blanks:

- (a) An image that cannot be obtained on a screen is called **virtual image**.
- (b) Image formed by a convex **mirror** is always virtual and smaller in size.
- (c) An image formed by a **plane** mirror is always of the same size as that of the object.
- (d) An image which can be obtained on a screen is called a **real** image.
- (e) An image formed by a concave **lens** cannot be obtained on a screen.

**Question 2.** Mark “T” if the statement is true and “F” if it is false.

- (a) We can obtain an enlarged and erect image by a convex mirror. (T/F)
- (b) A concave lens always forms a virtual image. (T/F)
- (c) We can obtain a real, enlarged and inverted image by a concave mirror. (T/F)
- (d) A real image cannot be obtained on screen. (T/F)
- (e) A concave mirror always forms a real image. (T/F)

**Answer:** (a) F

(b) T

(c) T

(d) F

(e) F

**Question 3.** Match the items given in Column I with one or more item of Column II.

(a) A plane mirror	(i) used as magnifying glass.
(b) A convex mirror	(ii) can form image of objects spread over large area.
(c) A convex lens	(iii) used by dentist to see enlarged image of teeth.
(d) A concave mirror	(iv) the image is always inverted and magnified.
(e) A concave lens	(v) the image is erect and of the same size than object.
	(vi) the image is erect and smaller in size than the object.

**Answer:** (a) (v)

(b) (ii)

(c) (i)

(d) (iii)

(e) (vi)

**Question 4.** State the characteristic of the image formed by a plane mirror.

**Answer:** Characteristics of the image formed by a plane mirror:

(i) The image formed is virtual

(ii) The image is laterally inverted.

(iii) It is of the same size as the object.

(iv) The image is situated at the same distance from the mirror as the object.

(v) The image is erected.

**Question 5.** Find out the letters of English alphabet or any other language known to you in which the image formed in plane mirror appears exactly like the letter itself. Discuss your findings.

**Answer:** A, H, I, M, O, T, U, V, W, X, Y are the letters of English alphabet in which the image formed in a plane mirror appears exactly like the letter itself.

**Question 6.** What is a virtual image? Give one situation where a virtual image is formed.

**Answer:** The image that cannot be formed or obtained on the screen is called virtual image. When we stand in front of our dressing table mirror, we use to see our virtual image. The virtual image is formed in case of plane and convex mirror.

**Question 7.** State the differences between convex and a concave lens.

**Answer:** Difference between convex lens and concave lens:

Convex lens	Concave lens
1. Thick at middle, thin at edge. 2. Can form real image. 3. Converges light falling on it	1. Thin at middle, thick at edge. 2. Cannot form real image. 3. Diverges light falling on it

**Question 8.** Give one use of a concave and a convex mirror.

**Answer:** Concave mirror – used by dentist to see enlarged image of teeth.  
Convex mirror – used in vehicles as rear view mirror.

**Question 9.** Which type of mirror can form a real image?

**Answer:** Concave mirror.

**Question 10.** Which type of lens forms always a virtual image?

**Answer:** Concave lens.

Choose the correct option in questions 11-13.

**Question 11.** A virtual image larger than the object can be produced by a

- (i) Concave lens
- (ii) Concave mirror
- (iii) Convex mirror
- (iv) Plane mirror

**Answer:** (iii) concave mirror.

**Question 12.** David is observing his image in a plane mirror. The distance between the mirror and his image is 4 m. if he moves 1 m towards the mirror, then the distance between David and his image will be:

- (i) 3 m
- (ii) 5 m
- (iii) 6 m
- (iv) 8 m

**Answer:** (iii) 6 cm.

**Question 13.** The rear view mirror of a car is a plane mirror. A driver is reversing his car at a speed of 2 m/s. The driver sees in his rear view mirror the image of a truck parked behind the car. The speed at which the image of the truck appears to approach the driver will be

- (i) 1 m/s
- (ii) 2 m/s
- (iii) 4 m/s
- (iv) 8 m/s.

**Answer:** (iii) 4 m/s.