

Experiment - 3

Focal length (Concave mirror and convex lens)

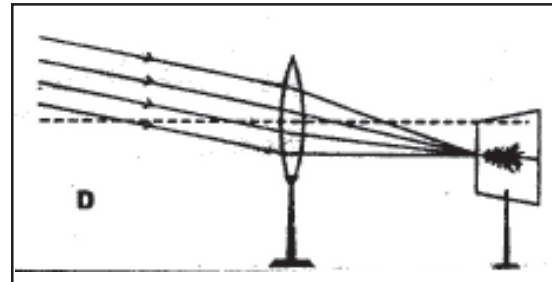
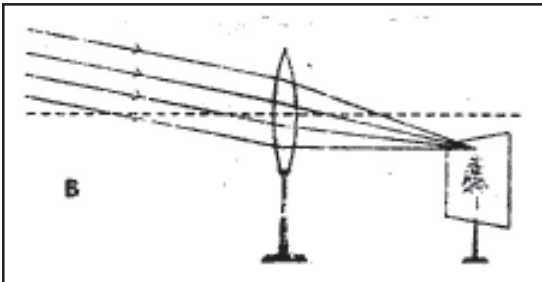
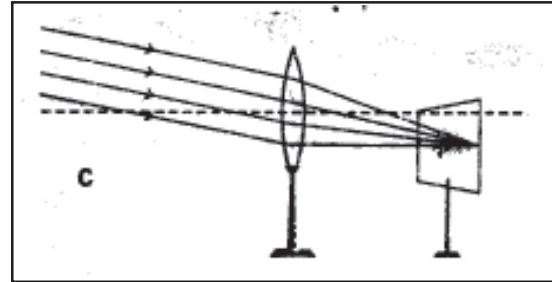
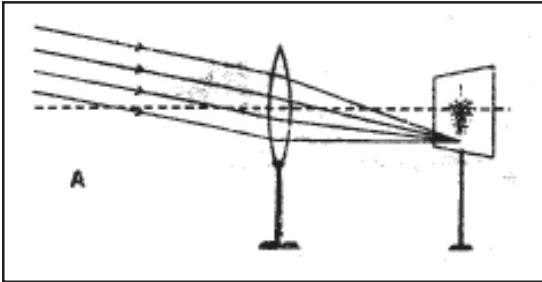
Q. 1 While performing the experiment for determination of focal length of a convex lens, some students obtained the image of a distant tree on the screen which one of the following diagrams represents correctly the image of tree on the screen.

(a) A

(b) B

(c) C

(d) D



Q. 2 In an experiment the image of a distant object formed by a concave mirror is obtained on a screen. To determine the focal length of the mirror, you need to measure the distance between the:-

(a) Mirror and the screen

(b) Mirror and the object

(c) Object and the screen

(d) Mirror and the screen and also between the object and the screen.

Q. 3 The image formed by concave mirror is real. The position of the screen should be

(a) behind the mirror

(b) on the same side of object between focus and infinity

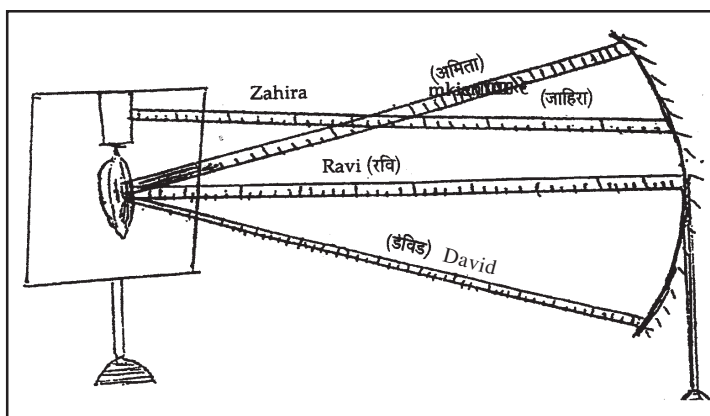
(c) on the same side of object between focus and pole

(d) none of these

Q. 4 In the experiment to determine focal length of a convex lens, a student obtained a sharp inverted image of a distant tree on the screen behind the lens. She then removed the screen and looked through the lens in the direction of the object. She will see:-

(a) An inverted image of the tree at the focus.

- (b) No image as the screen has been removed.
- (c) A blurred image on the wall of the laboratory.
- (d) An erect image of the tree on the lens.
- Q. 5 While performing the experiment for determination of focal length of a convex lens by using the sun as a distant object a student could not find a screen with stand. Which one of the following methods he should adopt safely? He should see:-
- (a) The image of sun directly through convex lens.
- (b) Focus the image of sun on his hand\
- (c) Focus the image of sun on his nylon shirt.
- (d) Focus the image of sun on the wall of the room.
- Q. 6 In an experiment to determine the focal length of a convex lens, the image of a distant tree is obtained on the screen. To determine the focal length of the lens, you are required to measure the distance between the :-
- (a) Lens and the tree only
- (b) Lens and the screen only
- (c) Screen and the tree only
- (d) Screen and the tree and also between the screen and the lens
- Q. 7 For performing an experiment, a student was asked to choose one concave mirror and one convex lens from a lot of mirrors and lenses of different kinds. The correct procedure adopted by her will be :-
- (a) To choose a mirror and lens which can form an enlarged and inverted image of an object.
- (b) To choose a mirror which can form a diminished and erect image and a lens which can form an enlarged and erect image of the object.
- (c) To choose a mirror and lens which can form an enlarged and erect image of an object.
- (d) To choose a mirror and a lens which can form a diminished and erect image of an object.
- Q. 8 Four students, Ameeta, Zahira, Ravi and David performed the experiment for determination of focal length of a concave mirror separately. They measured the distance between the screen and the mirror as shown in the following diagram. Which one of these students is likely to get the correct value of focal length of the concave mirror?



- (a) Ameeta (b) Zahira (c) Ravi (d) David

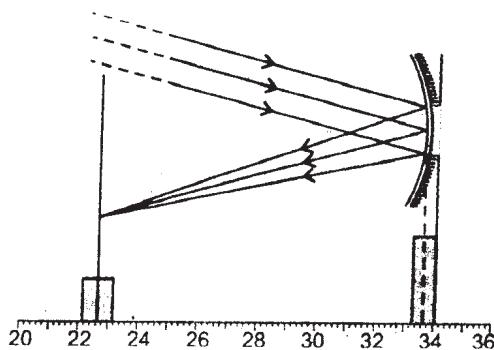
Q. 9 Your school laboratory has one large window. To find the focal length of a concave mirror using one of the walls as the screen, the experiment may be performed.

- (a) Near the wall opposite to the window.
 (b) On the same wall as the window
 (c) On the wall adjacent to the window
 (d) Only on the table as per the laboratory arrangement

Q. 10 A student obtains a blurry image of an object on a screen by using a concave mirror. In order to obtain a sharp image on the screen, he will have to shift the mirror :-

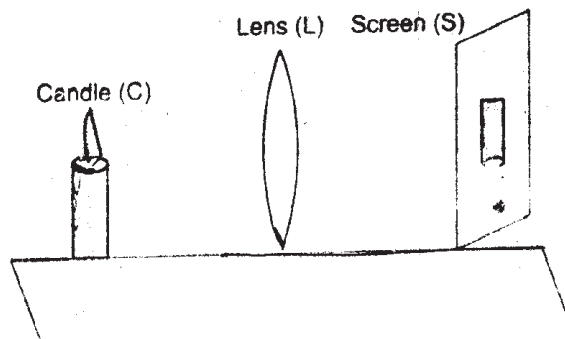
- (a) towards the screen
 (b) away from the screen
 (c) either towards or away from the screen depending upon the position of the object
 (d) to a position very far away from the screen

Q. 11 The focal length of the concave mirror in an experimental setup shown below, is :-



- (a) 10.2cm (b) 11.0cm (c) 11.4cm (d) 12.2cm

- Q. 12 A student performs an experiment on finding a focal length of a convex lens by keeping a lighted candle on one end of a laboratory table, a screen on its other end and the lens between them as shown in the figure. The positions of the three are adjusted to get a sharp image of the candle flame on the screen by making.



- (a) the screen in the direction of the lens or the lens in the direction of the screen
(b) the screen in the direction of the lens or the lens away from the screen
(c) the screen away from the lens or the lens in the direction of the screen
(d) neither the screen nor the lens.
- Q. 13 Given below are few steps (not in proper sequence) followed in the determination of focal length of a given convex lens by obtaining a sharp image of a distant object.
- (i) Measure the distance between the lens and screen
(ii) Adjust the position of the lens to form a sharp image.
(iii) Select a suitable distant object.
(iv) Hold the lens between the object and the screen with its faces parallel to the screen.
- The correct sequence of steps for determination of focal length is
- (a) (iii), (i), (iv), (ii) (b) (iii), (iv), (ii), (i)
(c) (iii), (i), (ii), (iv) (d) (i), (ii), (iii), (iv)