



PHYSICS

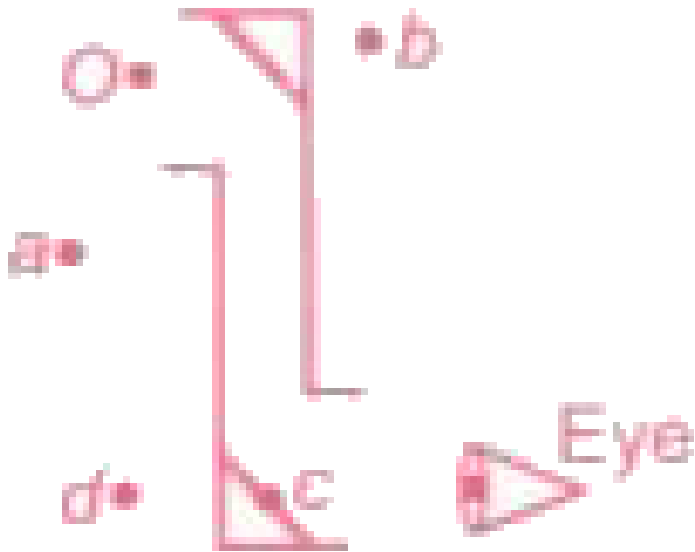
BOOKS - HT Olympiad Previous Year Paper

LIGHT, SHADOWS AND REFLECTIONS

Mcq

1. The diagram shows an object O viewed using two mirrors. A person looks into the mirrors as

shown. At which position is the image of O seen ?



A. a

B. b

C. c

D. d

Answer: D



Watch Video Solution

2. Which of the following are the properties of image formed by a plane mirror?

(i) The image is at the same distance as the object.

(ii) The image is upright.

(iii) The image is laterally inverted.

A. (i) and (ii) only

B. (ii) only

C. (ii) and (iii) only

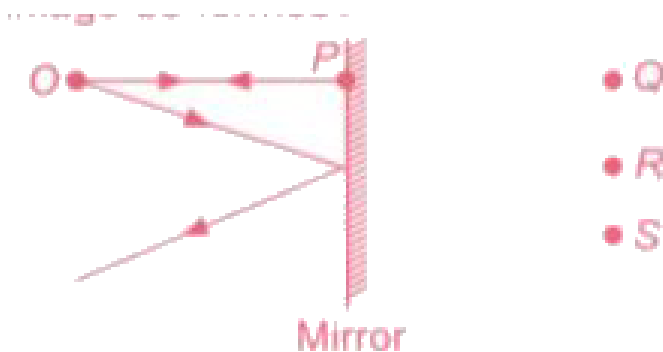
D. (i), (ii) and (iii)

Answer: D



Watch Video Solution

3. The diagram shows two divergent rays of light from an object O being reflected from a plane mirror. At which position will the image be formed ?



A. P

B. Q

C. S

D. R

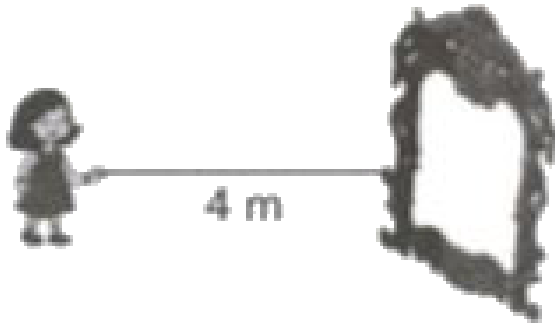
Answer: B



Watch Video Solution

4. A girl is 4 m away from the plane mirror. If she moves few steps closer to the mirror, what will happen to the size of image in the mirror ?
Consider that she can see her complete image

in both the cases.



- A. The size of image will decrease.
- B. The size of image will increase.
- C. The size of image will be the same.
- D. Cannot say

Answer: C



Watch Video Solution

5. A plane mirror reflects a pencil of light to form a real image. Then the pencil of light incident on the mirror is

A. Parallel

B. Convergent

C. Divergent

D. None of these

Answer: B

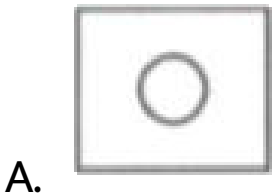




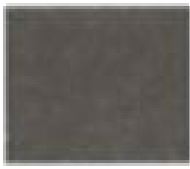
6. Study the set-up shown here.



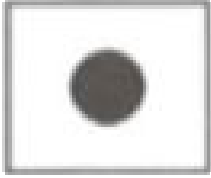
How will the shadow look like ?



C.



D.



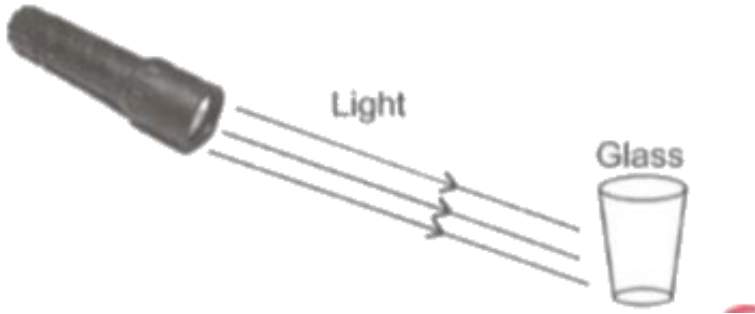
Answer: C



Watch Video Solution

7. There is no dark shadow formed by the tumbler when light is shone on it. This is

because:



- A. It is not night time yet.
- B. The light is not strong enough.
- C. The glass is a transparent object
- D. The distance between glass and screen is very large.

Answer: A



8. Which of the following statements is true ?

A. The image formed by a pinhole camera is inverted because light travels in a straight line.

B. Light does not change its direction on reflection.

C. As we move the object away from the light source, the shadow of the object

becomes smaller

D. Reflection is possible only from polished surface.

Answer: C



Watch Video Solution

9. Fill in the blanks with most appropriate option.

Although a number of objects, such as kites, birds, aeroplanes move in space, but their

shadow is not seen on the earth. This is due to the reason that the (i) , the region of complete (ii) is not able to reach the earth. The region of partial (iii) , that is the (iv) reaching the earth is too large and too faint to be visible to us.

A. (i)- Penumbra, (ii) -Darkness, (iii) -

Brightness, (iv) - Umbra

B. (i)-Penumbra, (ii) - Brightness, (iii) -

Darkness, (iv) Umbra

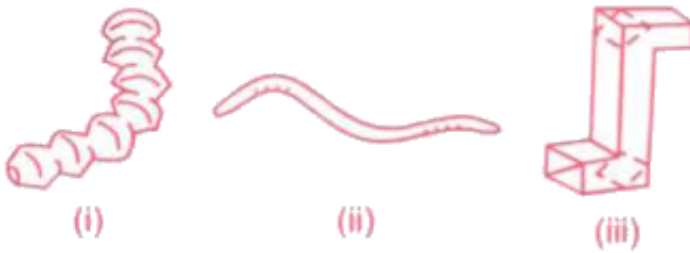
C. (i) - Umbra, (ii) Darkness, (iii)-Brightness,

(iv) - Penumbra

D. (i) - Umbra, (ii) - Brightness, (iii) -
Darkness, (iv) - Penumbra

Answer: B

 [Watch Video Solution](#)



10.

Which of the items shown above will allow you

to see around a corner from where you are standing ?

A. (i) only

B. (iii) only

C. (i) and (ii) only

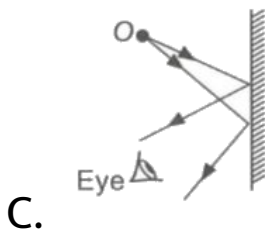
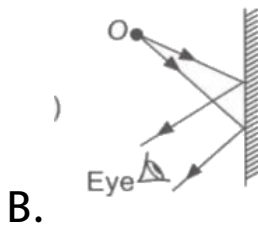
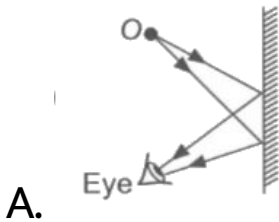
D. (i) and (iii) only

Answer: B

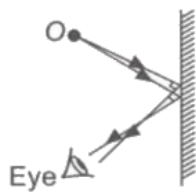


Watch Video Solution

11. A student views an object O by reflection in a plane mirror. Which is the correct ray diagram ?



D.



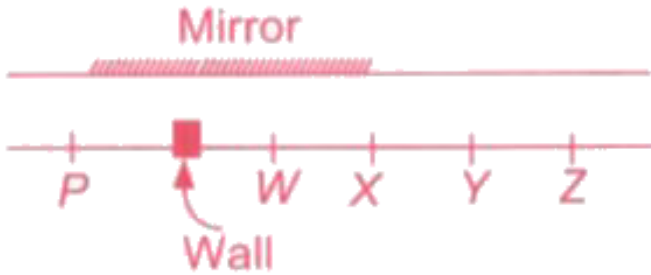
Answer: A



Watch Video Solution

12. A girl stands at the point P as shown in figure. Four of her friends are standing at the points w, x, y and Z. The girl is unable to see others directly due to a wall separating her and the other girls. By means of a mirror

placed as shown, how many of the four can she see ?



A. 4

B. 3

C. 2

D. 1

Answer: A



13. Vijay puts some water into four cups made of steel, porcelain, glass, frosted glass respectively. Which one of these cups will allow him to see the level of the water clearly ?

- A. Glass cup
- B. Steel cup
- C. Porcelain cup
- D. Frosted glass cup

Answer: C



Watch Video Solution

14. Three sticks are placed in an open field as shown in figure. Which of the following sticks will form the shadow of equal length ?



A. Sticks (I) and (II) only

B. Sticks (II) and (III) only

C. Sticks (I) and (III) only

D. All sticks (I), (II) and (III)

Answer: A



Watch Video Solution

15. Nisha placed a stick vertically in the playground at 8:15 am in the morning. How will the shadow of the stick at 12:00 noon be in comparison to the one at 8:15 am ?

A. It will be shorter than one at 8:15 am.

B. It will be same as one at 8:15 am.

C. It will be greater than one at 8:15 am

D. Shadow will not form at 12:00 noon

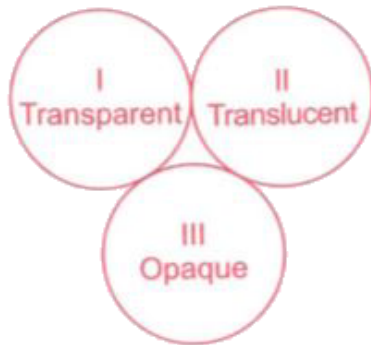
Answer: A



Watch Video Solution

Achievers Section Hots

1. Look at the Venn diagram. Which of the following objects described here are most likely to be I, II and III? Choose the correct option.



- | | I | II | III |
|-----|-------------|---------------|------------------|
| (A) | Oiled paper | Air | Cellophane paper |
| (B) | Glass | Frosted glass | Wood |
| (C) | Wax paper | Clean water | Diamond |
| (D) | Mirror | Diamond | Lamp |

A. (I) - Oiled paper, (II) - Air, (III) - Cellophane

B. (I) - Glass, (II) - Frosted glass, (III) Wood

C. (I)- Wax paper , (II) Clean water, (III)

Diamond

D. (I) - Mirror, (II) Diamond, (III) Lamp

Answer: B



Watch Video Solution

2. A solid, transparent sphere has a small, opaque dot at its center. When observed from outside, the apparent position of the dot will be

A. Closer to the eye than its actual position

B. The same as its actual position

C. Farther away from the eye than its
actual position

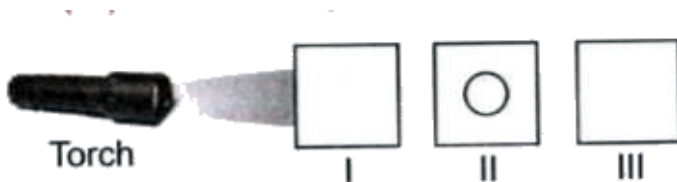
D. None of these

Answer: C



Watch Video Solution

3. Geeta placed three objects made of different materials as shown in the figure. She observed a bright spot of light at (II) but (III) would not get any spot. Then-



A. (I) and (II) are made of transparent materials and (III) is made of opaque material.

B. (I) is made of transparent material, (II) is made of translucent material and (III) is made of opaque material.

C. (I) is made of transparent material, (II) is made of opaque material and (III) can be made of either transparent or opaque or translucent material.

D. (I) and (II) are made of opaque material
and (III) is made of transparent material.

Answer: C



Watch Video Solution

4. Two students while sitting across a table looked down on to its top surface. They noticed that they could see their own and each other's image. The table top is likely to be made of:

- A. Unpolished wood, covered with white cloth
- B. Polished glass of red colour
- C. Glass covered with cellophane paper
- D. Smoked glass covered with green colour cloth.

Answer: B



Watch Video Solution

5. Read the given statements and select the correct option.

Statement 1 : Rahul placed a coloured plastic bottle in front of the beam of a torch light. Then he placed a transparent sheet of same size on the other side of bottle. No shadow will form on the screen.

Statement 2 : Translucent objects allow light to pass through them partially.

A. Both statements 1 and 2 are true and statement 2 is the correct explanation of

statement 1.

B. Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.

C. Statement 1 is true but statement 2 is false.

D. Statement 1 is false but statement 2 is true.

Answer: D



Watch Video Solution

