CHEMISTRY

BOOKS - VGS BRILLIANT CHEMISTRY (TELUGU ENGLISH)

REFLECTION AND REFRACTION

Exercise

1. The light reflected by a plane mirror will form a real image

A. Under no circumstances

B. If object is placed close to the mirror

C. If rays incident on mirror are parallel

D. If rays incident on mirror are converging

Answer:

2. If a ray of light is incident on a plane mirror at an angle of $30°$, then deviation produced by the plane mirror is

A. $30°$

B. $60°$

C. $90°$

D. $120°$

Answer:

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3. An object is placed at a distance f in the front of a convex mirror. If focal length of the

mirror is f, then distance of image from pole of the mirror is

A. f

B. 2f

C. $\dfrac{f}{2}$

D. $\dfrac{f}{4}$

Answer:

4. A point source of light P is placed at a distance L in front of a mirror of width d hung vertically on a wall . A man walks infront of the mirror a long a line parallel to the mirror at a distance 2L as shown in the figure. The greatest distance over which he can see the image of the light source, in the mirror is

A. $\dfrac{d}{2}$

B. d

C. 2d

D. 3d

Answer:

5. An object is immersed in a fluid . In order that the object becomes, it should

A. Have refractive index one

B. Absorb all light falling on it

C. Behave as a perfect reflector

D. Have refractive index exactly matching with that of the surrounding fluid

Answer:

6. If a fish lies at the bottom of a 4 m deep water tank $(\mu = 4/3)$ and a bird is flying at a height of 6m above the water surface, then apparent distance at which the fish appears to the bird is

A. 9m

B. 10m

C. 11m

D. 12m

Answer:

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7. Under which of the following statement describes the conditions a concave mirror can form an image larger then the actual object ?

A. When the object is kept at a distance equal to its radius of curvature

B. When object is kept at a distance less than its focal length

C. When object is placed between the focus and centre of curvature

D. When object is kept at a distance greater than its radius of curvature

Answer:

8. Which of the following statements describes the condition-when is refraction of light NOT possible?

a) The angle of incidence is $0°$. b) The two media have the same refractive index. c) The refractive index is higher then 3.0 .

   A. Only a and b

   B. Only b and c

   C. Only a and c

D. A, b and c

Answer:

9. In an ecperiment to determine the 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 throught the lens in the direction of the object she will see

A. An inverted image of the tree at the focus of the lens

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.

Answer:

10. The relation between u , v and R for a spherical mirror is

A. $R = \dfrac{2uv}{u+v}$

B. $R = \dfrac{2}{u+v}$

C. $R = \dfrac{2(u+v)}{uv}$

D. None of these

Answer:

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11. You are given water, mustard oil, glycerine and kerosene. In which of these media a ray of light incident obliquely at same angle would bend the most ?

A. Kerosene

B. Water

C. Mustard oil

D. Glycerine

Answer:

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12. A ray of light in incidentin medium 1 on a surface that separates medium 1 from medium 2 . Let v_1 and v_2 represent the velocity of light in medium 1 and medium 2 respectively . Also let n_{12} and n_{21} represent the refractive index of medium 1 with respect to medium 2 and refractive index of medium 2 with respect to medium 1, respectively. if 1 and r denote the angle of incidence and angle fo refraction, then -

A. $\dfrac{\sin 1}{\sin 2} = n_{21} = \dfrac{v_1}{v_2}$

B. $\dfrac{\sin 1}{\sin 2} = n_{21} = \dfrac{v_2}{v_1}$

C. $\dfrac{\sin i}{\sin r} = n_{12} = \dfrac{v_1}{v_2}$

D. $\dfrac{\sin i}{\sin r} = n_{12} = \dfrac{v_2}{v_1}$

Answer:

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13. The light reflected by a plane mirror will form a real image

A. Under no circumstances

B. If object is placed close to the mirror

C. If rays incident on mirror are parallel

D. If rays incident on mirror are converging

Answer:

14. If a ray of light is incident on a plane mirror at an angle of $30°$, then deviation produced by the plane mirror is

A. 30°

B. 60°

C. 90°

D. 120°

Answer:

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15. An object is placed at a distance f in the front of a convex mirror. If focal length of the

mirror is f, then distance of image from pole of

the mirror is

A. f

B. 2f

C. $\dfrac{f}{2}$

D. $\dfrac{f}{4}$

Answer:

16. A point source of light P is placed at a distance L in front of a mirror of width d hung vertically on a wall . A man walks infront of the mirror a long a line parallel to the mirror at a distance 2L as shown in the figure. The greatest distance over which he can see the image of the light source, in the mirror is

A. $\dfrac{d}{2}$

B. d

C. 2d

D. 3d

Answer:

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17. An object is immersed in a fluid . In order

that the object becomes, it should

A. Have refractive index one

B. Absorb all light falling on it

C. Behave as a perfect reflector

D. Have refractive index exactly matching with that of the surrounding fluid

Answer:

18. If a fish lies at the bottom of a 4 m deep water tank $(\mu = 4/3)$ and a bird is flying at a height of 6m above the water surface, then apparent distance at which the fish appears to the bird is

A. 9m

B. 10m

C. 11m

D. 12m

Answer:

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19. Under which of the following statement describes the conditions a concave mirror can form an image larger then the actual object ?

A. When the object is kept at a distance equal to its radius of curvature

B. When object is kept at a distance less than its focal length

C. When object is placed between the focus and centre of curvature

D. When object is kept at a distance greater than its radius of curvature

Answer:

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20. Which of the following statements describes the condition-when is refraction of light NOT possible?

a) The angle of incidence is $0°$. b) The two media have the same refractive index. c) The refractive index is higher then 3 . 0 .

A. Only a and b

B. Only b and c

C. Only a and c

D. A, b and c

Answer:

21. In an ecperiment to determine the 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 throught the lens in the direction of the object she will see

A. An inverted image of the tree at the focus of the lens

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.

Answer:

22. The relation between u , v and R for a spherical mirror is

A. $R = \dfrac{2uv}{u+v}$

B. $R = \dfrac{2}{u+v}$

C. $R = \dfrac{2(u+v)}{uv}$

D. None of these

Answer:

23. You are given water, mustard oil, glycerine and kerosene. In which of these media a ray of light incident obliquely at same angle would bend the most ?

A. Kerosene

B. Water

C. Mustard oil

D. Glycerine

Answer:

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24. A ray of light in incidentin medium 1 on a surface that separates medium 1 from medium 2 . Let v_1 and v_2 represent the velocity of light in medium 1 and medium 2 respectively . Also let n_{12} and n_{21} represent the refractive index of medium 1 with respect to medium 2 and refractive index of medium 2 with respect to medium 1, respectively. if 1 and r denote the angle of incidence and angle fo refraction, then -

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B. $\dfrac{\sin 1}{\sin 2} = n_{21} = \dfrac{v_2}{v_1}$

C. $\dfrac{\sin i}{\sin r} = n_{12} = \dfrac{v_1}{v_2}$

D. $\dfrac{\sin i}{\sin r} = n_{12} = \dfrac{v_2}{v_1}$

Answer: