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6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup> & 10<sup>th</sup>

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**(Classes Schedule: 6<sup>th</sup> to 10<sup>th</sup>)**

| Time        | Subjects                                     |
|-------------|--|
| 4:00 - 4:45 | Science                                      |
| 4:45 - 5:30 | Mathematics/Reasoning                        |
| 5:30 - 6:15 | Social Science (History, Civics & Geography) |
| 6:15 - 7:00 | English (Subjective and Objective)           |
| 7:00 - 7:30 | Hindi  |



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**Chapter - 10**  
**Light – Reflection and Refraction**  
**(MCQs)**

**Part - I**

**1. When light falls on a smooth polished surface, most of it**

- (a) is reflected in the same direction
- (b) is reflected in different directions
- (c) is scattered
- (d) is refracted into the second medium

**Answer: a**

**2. Image formed by reflection from a plane mirror is**

- (a) real and inverted
- (b) virtual and erect
- (c) real and erect
- (d) virtual and inverted

**Answer: b**

**3. If an incident ray passes through the focus, the reflected ray will**

- (a) pass through the pole
- (b) be parallel to the principal axis
- (c) retrace its path
- (d) pass through the centre of curvature

**Answer: b**

**4. Magnifying power of a concave lens is**

- (a) always  $> 1$



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- (b) always  $< 1$
- (c) always  $= 1$
- (d) can have any value

Answer: b

**5. The image formed by a convex lens can be**

- (a) virtual and magnified
- (b) virtual and diminished
- (c) virtual and of same size
- (d) virtual image is not formed

Answer: a

**6. A point object is placed at a distance of 20 cm from a convex mirror of focal length 20 cm. The image will form at:**

- (a) at infinity
- (b) at focus
- (c) at the pole
- (d) behind the mirror

Answer: d

**7. Focal length of a concave mirror is**

- (a) negative
- (b) positive
- (c) depends on the position of object
- (d) depends on the position of image

Answer: a

**8. If the power of a lens is  $-2\text{ D}$ , what is its focal length?**

- (a)  $+50\text{ cm}$
- (b)  $-100\text{ cm}$
- (c)  $-50\text{ cm}$



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(d) +100 cm

Answer: c

9. A spherical mirror and a spherical lens each have a focal length of -10 cm. The mirror and the lens are likely to be

(a) both concave

(b) both convex

(c) the mirror is concave and the lens is convex

(d) the mirror is convex and the lens is concave

Answer: a

10. If the magnification produced by a lens has a negative value, the image will be

(a) virtual and inverted

(b) virtual and erect

(c) real and erect

(d) real and inverted

Answer: b

11. When the object is placed between  $f$  and  $2f$  of a convex lens, the image formed is

(a) at  $f$

(b) at  $2f$

(c) beyond  $2f$

(d) between  $O$  and  $f$

Answer: c

12. Which mirror can produce a virtual, erect and magnified image of an object?

(a) Concave mirror

(b) Convex mirror

(c) Plane mirror



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(d) Both concave and convex mirrors

Answer: a

13. If the image is formed in front of the mirror, then the image distance will be

(a) positive or negative depending on the size of the object

(b) neither positive nor negative

(c) positive

(d) negative

Answer: d

14. A ray of light is travelling from a rarer medium to a denser medium. While entering the denser medium at the point of incidence, it

(a) goes straight into the second medium

(b) bends towards the normal

(c) bends away from the normal

(d) does not enter at all

Answer: b

15. A student does the experiment on tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. He can get a correct measure of the angle of incidence and the angle of emergence by following the labelling indicated in figure:

MCQ Questions for Class 10 Science Light Reflection and Refraction with Answers 1

(a) I

(b) II

(c) III



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(d) IV

Answer: d

## Part – 2

**Q1. If the power of a lens is  $-2\text{ D}$ , what is its focal length?**

- (i)  $+50\text{ cm}$
- (ii)  $-100\text{ cm}$
- (iii)  $-50\text{ cm}$
- (iv)  $+100\text{ cm}$

Answer (iii)  $-50\text{ cm}$

**Q2. Magnification produced by a rear view mirror fitted in vehicles**

- (i) is less than one
- (ii) is more than one
- (iii) is equal to one
- (iv) can be more than or less than one depending upon the position of the object in front of it.

Answer (i) is less than one

**Q3. Where should an object be placed in front of convex lens to get a real image of the size of the object?**

- (i) At the principal focus of the lens.
- (ii) At twice the focal length
- (iii) At infinity
- (iv) Between the optical centre of the lens and its principal focus.

Answer (ii) At twice the focal length



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**Q4. When object moves closer to a concave lens the image by it shift**

- (i) away from the lens on the same side of object
- (ii) toward the lens
- (iii) away from the lens on the other side of lens
- (iv) first towards and then away from the lens

Answer (ii) toward the lens

**Q5. Focal length of a concave mirror is**

- (i) negative
- (ii) positive
- (iii) depends on the position of object
- (iv) depends on the position of image

Answer (i) negative

**Q6. A 10 mm long awl pin is placed vertically in front of a concave mirror. A 5 mm long image of the awl pin is formed at 30 cm in front of the mirror. The focal length of this mirror is**

- (i) -30 cm
- (ii) -20 cm
- (iii) -40cm
- (iv) -60 cm

Answer (ii) -20 cm

**Q7. The refractive index of water is 1.33. The speed of light in water will be**

- (i)  $1.33 \times 10^8$  m/s
- (ii)  $3 \times 10^8$  m/s
- (iii)  $2.26 \times 10^8$  m/s
- (iv)  $2.66 \times 10^8$  m/s





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Answer (iii)  $2.26 \times 10^8$  m/s

**Q8. In torches, search lights and head lights of vehicles the bulb is placed**

- (i) Between pole and focus
- (ii) Very near to the focus
- (iii) Between focus and centre of curvature
- (iv) At centre of curvature

Answer (ii) Very near to the focus

**Q9. The image formed by a convex lens can be**

- (i) virtual and magnified
- (ii) virtual and diminished
- (iii) virtual and of same size
- (iv) virtual image is not formed

Answer (i) virtual and magnified

**Q10. Which of the following can make a parallel beam of light when light from a point source is incident on it?**

- (i) Concave mirror as well as convex lens
- (ii) Convex mirror as well as concave lens
- (iii) Two plane mirrors placed at  $90^\circ$  to each other
- (iv) Concave mirror as well as concave lens

Answer (i) Concave mirror as well as convex lens

**Q11. If an incident ray passes through the focus, the reflected ray will**

- (i) pass through the pole
- (ii) be parallel to the principal axis
- (iii) retrace its path
- (iv) pass through the centre of curvature

Answer (ii) be parallel to the principal axis



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**Q12. For a real object, which of the following can produce a real image?**

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

**Answer (ii) Concave mirror**

**Q13. Image formed by reflection from a plane mirror is**

- (i) real and inverted
- (ii) virtual and erect
- (iii) real and erect
- (iv) virtual and inverted

**Answer (ii) virtual and erect**

**Q14. Convex lens is also known as**

- (i) converging lens
- (ii) diverging lens
- (iii) radial lens
- (iv) axial lens

**Answer (i) converging lens**

**Q15. When the object is placed between  $f$  and  $2f$  of a convex lens, the image formed is**

- (i) at  $f$
- (ii) at  $2f$
- (iii) beyond  $2f$
- (iv) between  $O$  and  $f$

**Answer (iii) beyond  $2f$**



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**Q16. An object at a distance of + 15 cm is slowly moved towards the pole of a convex mirror. The image will get**

- (i) shortened and real
- (ii) enlarged and real
- (iii) enlarge and virtual
- (iv) diminished and virtual

Answer (iv) diminished and virtual

**Q17. If the image is formed in front of the mirror, then the image distance will be**

- (i) positive or negative depending on the size of the object
- (ii) neither positive nor negative
- (iii) positive
- (iv) negative

Answer (iv) negative

**Q18. The deviation of light ray from its path when it travels from one transparent medium to another transparent medium is called**

- (i) reflection
- (ii) refraction
- (iii) dispersion
- (iv) scattering

Answer (ii) refraction

**Q19. When light falls on a smooth polished surface, most of it**

- (i) is reflected in the same direction
- (ii) is reflected in different directions
- (iii) is scattered



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(iv) is refracted into the second medium

Answer (i) is reflected in the same direction

**Q20. An object at a distance of 30 cm from a concave mirror gets its image at the same point. The focal length of the mirror is**

(i) – 30 cm

(ii) 30 cm

(iii) – 15 cm

(iv) +15 cm

Answer (iii) – 15 cm

**Q21. The mirror having reflection surface curved outward**

(i) plane mirror

(ii) concave mirror

(iii) convex mirror

(iv) cylindrical mirror

Answer (iii) convex mirror

**Q22. Image formed by reflection from a plane mirror is**

(i) real and inverted

(ii) virtual and erect

(iii) real and erect

(iv) virtual and inverted

Answer (ii) virtual and erect

**Q23. A concave mirror of radius 30 cm is placed in water. It's focal length in air and water differ by**

(i) 15

(ii) 20

(iii) 30



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(iv) 0

Answer (iv) 0

**Q24. In which of the following, the image of an object placed at infinity will be highly diminished and point sized?**

(i) Concave mirror only

(ii) Convex mirror only

(iii) Convex lens only

(iv) Concave mirror, convex mirror, concave lens and convex lens

Answer (iv) Concave mirror, convex mirror, concave lens and convex lens

**Q25. The distance between the object and image will be**

(i) 0.25 m

(ii) 1.0 m

(iii) 0.5 m

(iv) 0.125 m

Answer (iii) 0.5 m

**Q26. The angle of incidence for a ray of light having zero reflection angle is**

(i) 0

(ii)  $30^\circ$

(iii)  $45^\circ$

(iv)  $90^\circ$

Answer (i) 0

**Q27. You are given water, mustard oil, glycerine and kerosene. In which of these media a ray of**



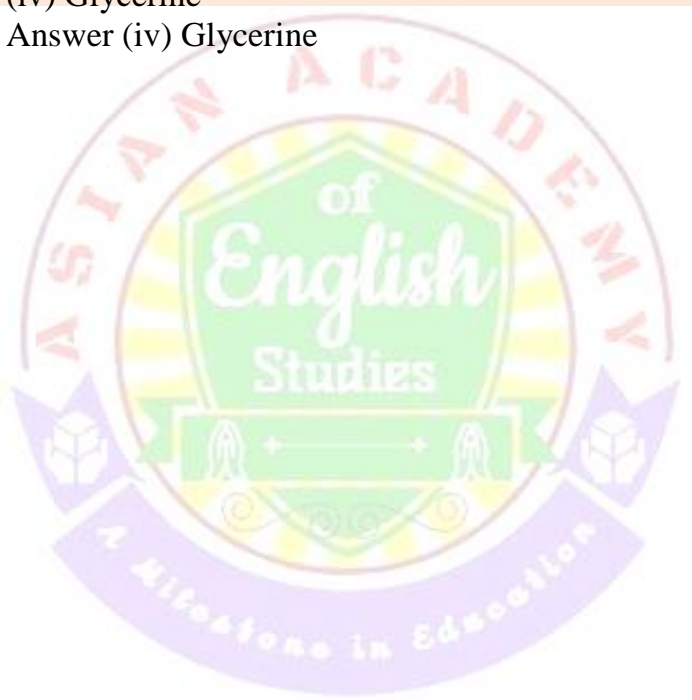
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light incident obliquely at same angle would bend the most?

- (i) Kerosene
- (ii) Water
- (iii) Mustard oil
- (iv) Glycerine

Answer (iv) Glycerine



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