

BHARATH COACHING CENTRE

10th CBSE

Science

Total: 80

Physics

Time: 2 hrs.

SECTION – A

10 x 1 = 10

1. A student obtains a blurred 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 position very far away from the screen
2. The condition for virtual image formed by a concave mirror
 - a) $u > f$
 - b) $u < f$
 - c) $u = f$
 - d) none of these
3. The image of a distance object is obtained on a screen by using concave mirror. The focal length of the mirror can be determined by measuring the distance between
 - a) The object and the mirror
 - b) the object and the screen
 - c) The mirror and the screen
 - d) both (c) and (d)
4. Find the power of a concave lens of focal length 2m and what does the negative sign indicates?
5. For tracing the path of a ray of light through a rectangular glass slab, the range of angle of incidence should be between
 - a) 15° and 40°
 - b) 20° and 45°
 - c) 30° and 60°
 - d) 50° and 75°
6. If an object moves towards a convex lens, the image size
 - a) Remains the same
 - b) decreases
 - c) increases
 - d) first increase then decreases
7. When the ray of light is going from rarer to denser medium the incident and refraction angle are related as
 - a) $i = r$
 - b) $i > r$
 - c) $i < r$
 - d) $i \leq r$
8. Lateral displacement produced by refracted ray is directly proportional to
 - a) angle of incidence
 - b) angle of refraction
 - c) angle of reflection
 - d) thickness of the slab
9. Define Para axial axis?
10. After tracing the ray of path of light through a prism a student measured the different angles and observed that

SECTION – B

2 X 5 = 10

11. Define laws of reflection and laws of refraction?
12. What is the reason for the different deviation?
13. Define Snell's law of reflection of light?
14. What is power of accommodation?
15. When old man uses lenses of power +3D? What defect the old man suffers from?
16. What do you mean by far point and near point of eye?
17. Why some people have blue eye and other black or brown?
18. What do you mean by lateral displacement?
19. Can you see a rainbow on the moon?

20. Why lemon placed in water appears large?

SECTION – C

Any 5 questions

3 X 5 = 15

21. What should be the height of the mirror to see the full image if the height of the person is 197.5Nm?
22. What are the causes of refraction?
23. Why is the power of the lens measured as the reciprocal of its focal length?
24. A concave mirror and a convex lens are immersed in water. What changed do you expect in their respective focal length as compared to their values in air?
25. Can we recombine the spectrum of white light? Explain with the help of a diagram?
26. Dispersion occurs only on reflection and not on refraction. Whether it is true or false? Justify your answer.
27. Why do stars twinkle?

SECTION – D

4 X 5 = 20

28. Why the sun does appear bigger and seems to possess an oval shape during sunrise and sunset?
29. An object 3cm is placed at a distance of 10cm in front of a concave mirror of focal length 20cm. Find the position, nature, and size of image formed?
30. An object is brought towards a concave mirror. How does the position and size of the image change?
31. Explain defects of vision and their corrections?
32. Explain refraction of light through a triangle glass prism and denotes all its angles with a neat diagram?
33. A concave lens has focal length of 15cm. At what distance should the object from the lens should be placed? Show that it forms an image at 10cm from the lens? Also, find magnification produced by lens.
34. A prism causes dispersion of white light while a rectangular glass box does not. Explain?