

BHARATH COACHING CENTRE

10th CBSE

Human Eye

Total: 50

Science

Time: 1.30 hrs

SECTION – A

5 x 1 = 5

1. Name the part of human eye having light sensitive layer.
2. Mention the position where the image is focused in the eye of a person having hypermetropia.
3. A glass prism is able to produce a spectrum when white light passes through it, but a glass slab does not produce any spectrum, why?
4. When a light ray passes obliquely through the atmosphere in an upward direction, how does its path generally change?
5. Mention any two natural phenomena which occur due to scattering of light.

SECTION – B

5 x 2 = 10

6. Why do we observe difference in colours of the sun during sunrise , sunset and noon.
7. "Stars seem higher than they actually are." Explain why.
8. Which component of white light deviates the least and the most while passing through a glass prism? State reason of this difference in deviation.
9. The minimum power of eye lens is 40D. If the far point of normal eye is infinity, find the size of the eye ball.
10. What is meant by least distance of distinct vision? How does this vary between the very young and old people?

SECTION – C

5 x 3 = 15

11. Trace the path of a ray of light through a triangular prism. Also label the diagram.
12. Describe the formation of rainbow in the sky with the help of a diagram.
13. A star appears on the horizon. What is the true position of the star? Explain with the help of a diagram.
14. (a) Explain why sun is visible two minutes before the actual sunrise?
(b) What is Tyndall effect? Explain.
15. How could you show that the colours of the spectrum combine to give white light?

SECTION – D

5 x 5 = 25

16. (a) Draw a simple diagram of the human eye and label clearly the cornea, iris, pupil, ciliary muscles, eye lens, retina, optic nerve and blind spot.
(b) Describe the working of the human eye with the help of the above diagram.
17. (a) Explain why, we cannot see or seats first when we enter a darkened cinema hall from bright light but gradually they become visible.
(b) Nocturnal animals tend to have wide pupils and lots of rods in their retinas. Suggest reason for this.

18. What is short – sightedness? State the two causes of short – sightedness. With the help of ray diagram , show: (i) The eye defect short – sightedness
(ii) Correction of short – sightedness by using a lens.
19. What is long – sightedness? State two causes of long – sightedness. With the help of ray diagrams, show
(i) The eye defect long – sightedness
(ii) Correction of long – sightedness by using a lens.