

1. What type of image is formed on the retina of human eye?
2. Which part of human eye controls the amount of light that enter the human eye?
3. What is the reason for a blurred, strained vision of human eye when you try to read a book very close to the eyes?
4. Why does the power of accommodation of human eye decrease due to aging?
5. Draw the diagram of defective and corrective myopic and hypermetropic eye
6. A person finds that his near point has moved out to 50cm from him, what is his problem? Calculate the power of corrective lens that he should be prescribed to correct his defect?
7. A person finds that his near point has come to 500cm in front of him. What is his problem? Calculate the power of corrective lens that he should be prescribed to correct his defect?
8. A person is not able to read a book kept at his normal near point and also not able to see a star since the images of these objects converge 0.2cm either side of his retina. What is his defect and prescribe him a correct lens.
10. List out the properties of a good source of energy?
11. Explain how hydro and wind energies are the indirect sources of solar energy?
12. Write the differences between renewable and non-renewable resources of energy.
13. What nuclear reaction takes place in the sun?
14. What is the principle on which working of electric motor is based?
15. "A field exists through a wire through which a direct current is flowing", suggest a method to justify this comment?
16. What is direct current (d.c) and alternating current (a.c).
17. A circuit has a fuse of 5 A. What is the maximum number of 60 W (220 V) bulbs that can be safely used in the circuit?
18. What is the principle behind the working of electric generator?
19. What is ohm's law? Give its mathematical expression?
20. Calculate the amount of charge that would flow in 1 hour through the elements of an electric bulb drawing a current of 0.4 A.
21. A 100 watt electric bulb is lighted for 2 hours daily and four 40 watt bulbs are lighted for 4 hours daily. Calculate the electric energy consumed in kWh in 30 days.

22. What happens to the light when it travels from denser to rarer medium?
23. What is the difference between real and virtual images?
24. A doctor has prescribed a corrective lens of power + 1.5 D. Find the focal length of the lens. Is the prescribed lens diverging or converging?
25. Light enters from air to glass having refraction index 1.50. What is the speed of light in the glass? The speed of light in vacuum is  $3 \times 10^8 \text{ ms}^{-1}$ .
26. An object 5 cm in length is held 25 cm away from a converging lens of focal length 10cm. Draw the ray diagram and find the position, size and nature of the image formed.
27. An object is placed at 10cm in front of a concave mirror of focal length 15cm. Find the position, nature and size of the image.
28. (a) What are magnetic field lines? Why two magnetic lines of force do not intersect.
- (b) Draw magnetic field around a (i) straight current carrying conductor (ii) circular current carrying conductor.
29. (a) What are the factors on which the strength of magnetic field produced by a current carrying solenoid depends?
- (b) Why is series arrangement not used for domestic circuits? Give three reasons.
30. What is Myopia? List two causes for the same. Describe with a ray diagram, how this defect is corrected.
31. What is Hypermetropia? List two causes for the same. Describe with a ray diagram, how this defect is corrected.
32. A convex mirror used on moving automobile has radius of curvature of 3.0 m. If another truck is following it at a constant distance of 4.5m, find (i) position, (ii) nature and (iii) magnification for the image formed in it. Also draw a neat diagram for the formation of image.
33. What do you understand by the term refraction? State Snell's law of refraction.  
A ray of light strikes the surface of water, such that its speed in water is  $2.25 \times 10^8 \text{ cms}^{-1}$ . If refractive index of water is  $\frac{4}{3}$ , what is the speed of light in air?
34. The magnification produced by a mirror is 4 for both type of images in two different cases. If the radius of curvature of the mirror is 40cm calculate the object distance and image distance for both the cases
35. Will there be a difference between the observation of the floor of the bottom of the swimming pool when it is empty and when it is filled with water.