Ch-9 Light – Reflection and Refraction

1. What is the magnification of a plane mirror?
2. What is silvering of mirror?
3. What is refractive mirror?
4. State the mirror formula, lens formula and power of lens.
5. The refractive index of water is 1.33 and kerosene is 1.44. Calculate refractive index of the kerosene with respect to water.
6. What kind of mirrors are used in big shopping stores to watch activities of customers?
7. Give mirror image of word 'AMBULANCE'.
8. List four characteristics of the images formed by plane mirrors.
9. Draw a ray diagram to show the path of the reflected ray corresponding to an incident ray which is directed parallel to the principal axis of a convex mirror. Mark on it the angle of incident and the angle of reflection.
10. A spherical mirror produces an image of magnification -1 on a screen placed at a distance of 50 cm from the mirror.
    a. Write the type of mirror.
    b. Find the distance of the image from the object.
    c. What is the focal length of the mirror?
    d. Draw the ray diagram to show the image formation in this case.
11. State the laws of refraction of light. If the speed of light in vacuum is 3×10^8 ms^{-1}, find the speed of light in a medium of absolute refractive index 1.5.
12. Which phenomenon is responsible for making the path of light visible?
13. When we place a glass prism in the path of a narrow beam of white light a spectrum is obtained.
14. What happens when a second identical prism is placed in an inverted position with respect to the first prism? Draw a labeled ray diagram to illustrate it.
15. The power of the lens is -4.0 D. What is the nature of this lens?
16. Which type of mirror is used to give erect and enlarged image of an object?
17. Draw the ray diagram and also state the position, the relative size and the nature of image formed by a concave mirror when the object is placed at the centre of curvature of the mirror.
18. Name the type of mirror used in following situations
    a. Headlights of the car.
    b. Side/rear view mirror of a vehicle.
    c. Solar furnace.
19. Differentiate between concave and convex lens.
20. Draw the diagram of path of light when it travels through a glass slab.
21. Draw and explain the ray diagram formed by a convex mirror when –
    a. Object is at infinity.
    b. Object is at finite distance from the mirror.
22. Name the mirror which can show the size of the object to be double of its original.
23. If the speed of light in water is 2.25×10^8 ms^{-1} and the speed in vacuum is 3×10^8 ms^{-1}. Calculate the refractive index of water.
24. Find the focal length of a lens of power -2.0 D. What type of lens is this?