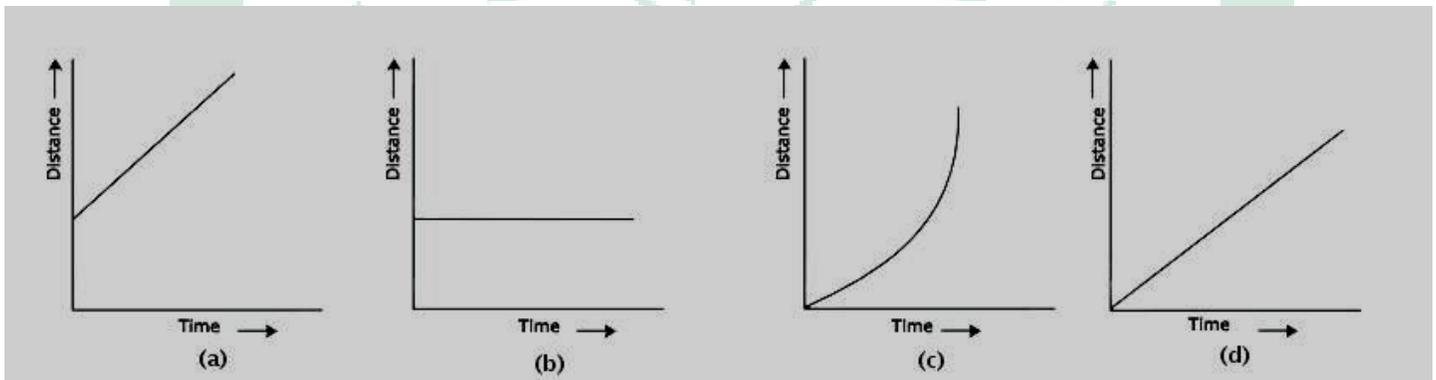




TOPIC: REST & MOTION

1. The tip of the hour-hand of a watch always takes the same time to cover the same distance. Is its motion uniform or periodic or both? Explain.
2. What is amplitude and time period for a simple pendulum?
3. How is frequency related to time period for a pendulum?
4. What is the difference between vibratory and oscillatory motion?
5. Give example of a non-periodic motion.
6. What is retardation?
7. What information do we get from distance-time graphs?
8. What are the different types of speed?
9. Which one of the following graphs indicates the motion of a truck which is not with constant speed?



10. Give the difference between mass & weight.
11. How can you say that motion and rest are relative ?
12. Define Speed, distance. How are they related to each other? Mention the units of both of them.

Numerical Problems

1. Convert the followings-
 - (a) Two days to minutes
 - (b) 2 years to days.
 - (c) three weeks to hours
 - (d) One month to hours
2. A simple pendulum takes 15 seconds to complete 5 oscillations. What is the time period of the pendulum?
3. If a car is moving with a speed of 5 km/h on a highway find the distance travelled by the car in 3 hours?
4. Sunil covers a distance of 2.4 km from her house to reach her school on a bicycle. If the bicycle has a speed of 2 m/sec, calculate the time taken by her to reach the school.
5. A car is moving with speed 72 km/hr. Convert this speed into meter/sec.

- A bus covers a distance from A to B at 40 km/h and while returning it travels at 50 km/h. Calculate the average speed.
- The odometer of a car reads 57321.0 km when the clock shows the time 08:30 AM. What is the distance moved by the car, if at 08:50 AM, the odometer reading has changed to 57336.0 km? Calculate the speed of the car in km/min during this time. Express the speed in km/h also.
- The distance between two stations is 240 km. A train takes 4 hours to cover this distance. Calculate the speed of the train.
- A car covers 20 km in the first hour and cover 30 km in the last 4 hours. Find its average speed.
- (i) Find out the velocity of the object. (ii) Explain the motion of the object from the following graph.

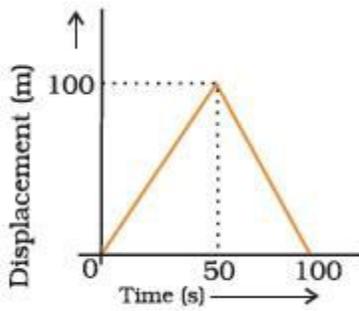
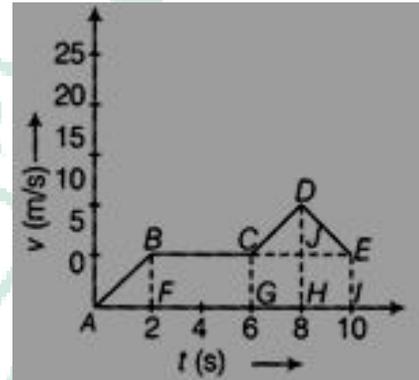
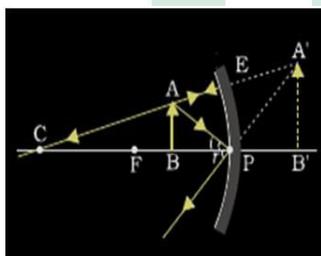


Fig. 8.4

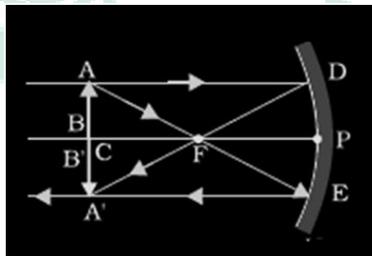


TOPIC: LIGHT

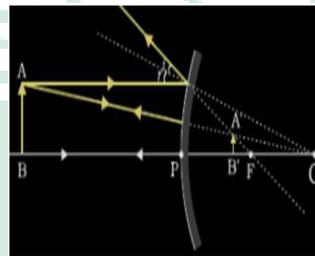
- Why a convex lens is called a converging lens and a concave lens a diverging lens?
- What are the uses of lenses?
- State the characteristics of the image formed by a plane mirror, convex mirror & concave mirror (object is in between Focus & the Pole).
- If the focal length of a concave mirror is 25cm. What is its radius of curvature?
- Identify the following types of mirrors & the type of image formed in it.



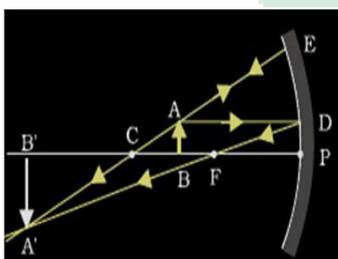
(i)



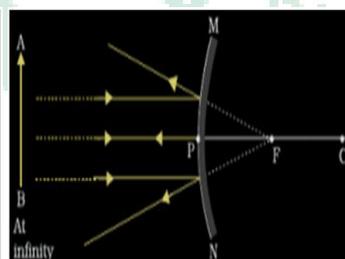
(ii)



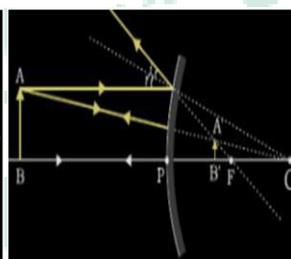
(iii)



(iv)



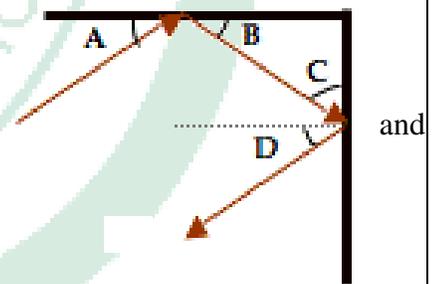
(v)



(vi)

6. A candle flame is placed in front of a large sized spherical mirror. Its image is being on a wall. The image formed on the mirror is not sharp. Explain why? How can we ensure that a sharp image be obtained on screen?
8. What kind of mirror is used in big shopping stores to watch activities of customers?
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. Which phenomenon is responsible for making the path of light visible?
11. When we place a glass prism in the path of a narrow beam of white light a spectrum is obtained.
12. 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.
13. Which type of mirror is used to give erect and enlarged image of an object?
14. 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.
15. If you have been given three different types of mirrors, how will you identify each one of them?
16. Suppose we wish to obtain the real image of a distant tree. Explain two possible ways in which we can do it.
17. Explain with the help of a diagram, why a pencil partly immersed in water appears to be bent at the water surface.
18. Name the type of mirror in the following situations. Support your answer with reason & diagram for each case.
 a) rear view mirror of vehicles b) Solar furnace c) Headlights of a car
19. Define the following terms with the supportive diagram:-
 a) Aperture b) Pole c) Principal Axis d) Radius of curvature e) Focal length
 f) Reflection g) Refraction h) Spectrum i) Dispersion of light j) Rectilinear Propagation of light
20. Show the image formation by a Plane mirror for an object of finite size & of a point object.
21. Give the differences between:-
 a) Lens & mirror b) Real & Virtual image c) Regular & Irregular reflection d) Primary & Secondary colours
22. Why does a Newton's disc appear white when it is rotated?
23. List the uses of Plane mirror.
24. Draw the ray diagram of Concave mirror when the object is placed:-
 a) at infinity b) beyond the C c) at C d) in between C & F e) in between Pole & F f) at F
25. Sunita stands 68 cm from a plane mirror, inspecting her scalp. How far is the image of her scalp located from his scalp?

26. Sunil arranges two mirrors with a right angle orientation as shown. Ray then directs a laser line at one of the mirrors. The light reflects off both mirrors as shown. If angle A is 38° , then what is the angle measure of angles B, C, and D E?



SYLLABUS :

1. LIGHT

2. REST & MOTION
