INDIAN SCHOOL DARSAIT

Class X -Physics

Topic: Light -Reflection

Worksheet : 1 **Name of the student :**

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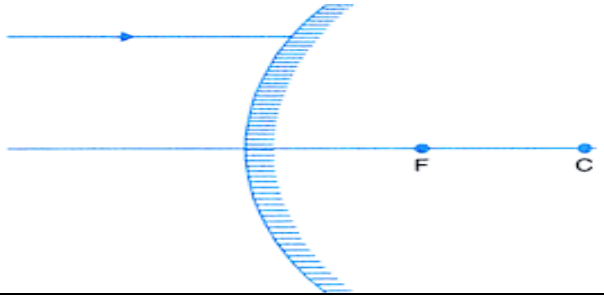
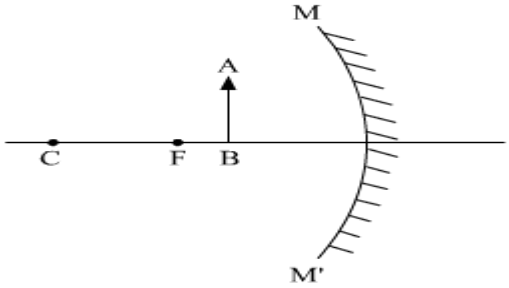
	<u>One Mark Questions</u>
1.	An incident ray makes an angle 35^o with the surface of a plane mirror. What is the angle of reflection?
2.	Name the spherical mirror which: (a) has a positive focal length (b) always forms a virtual image
3.	The outer surface of a hollow sphere of aluminium of radius 50 cm is to be used as a mirror. What will be the focal length of this mirror? Which type of spherical mirror will it provide?
4.	Redraw the diagram given below in your answer book and show the direction of the light ray after reflection from the mirror. 
5.	What is the nature of the image formed by a concave mirror if the magnification produced by the mirror is: (a) +3 (b) -1 Predict the size of image in both the cases.
	<u>Two Mark Questions</u>
6.	Define the focus of a concave mirror. If the radius of curvature of a convex mirror is 30 cm, what would be its focal length?
7.	State and explain the laws of reflection of light with the help of a labeled ray diagram.
8.	List two possible ways in which a concave mirror can produce a magnified image of an object placed in front of it. State the difference, if any, between these two images.

9.	The radius of curvature of a rear- view mirror in a car is 4m. If a truck is behind the car, located 5m from the rear-view mirror of the car. Calculate the size of the image relative to the size of the truck and also find the position and nature of the image formed.
10.	An optical device has been given to a student and he determines its focal length by focusing the image of a sun on a screen placed 24 cm from the device on the same side of the sun. (a) Name the optical device (b) Find its focal length.
11.	Draw the following diagram in your answer book and show the formation of image of the object AB with the help of suitable rays. 
	<u>Three Mark Questions</u>
12.	Draw ray diagrams to show the image formation by a concave mirror i) For an object placed at the focus (F). ii) For an object placed between centre of curvature (C) and focus (F)
13.	A 4 cm needle is placed 12cm away from a convex mirror of focal length 15 cm. Give the location of image and magnification. What happens to the image if the needle is moved further away from the mirror?
14.	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.
15.	An object 2 cm in size is placed 30 cm in front of a concave mirror of focal length 15 cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image? What will be the nature and the size of the image formed? Draw a ray diagram to show the formation of the image in this case.
16.	It is desired to obtain an erect image of an object,using a concave mirror of focal length 20cm (i) What should be the range of distance of the object from the mirror? (ii) Will the image be bigger or smaller than the object? (iii) Draw a ray diagram to show the image formation in this case.
17.	List the sign conventions for reflection of light by spherical mirrors. Draw a diagram and apply these conventions in the determination of focal length of a spherical mirror which forms a three times magnified real image of an object placed 16 cm in front of it.