

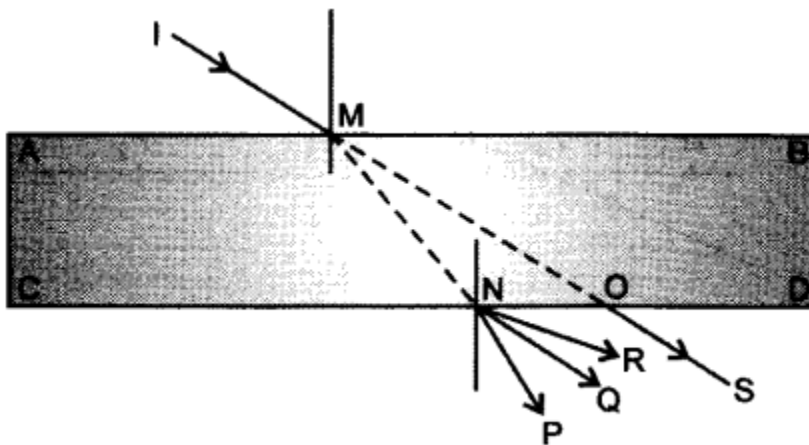
DWARKA INTERNATIONAL SCHOOL (Session 2022-2023)

Class – X

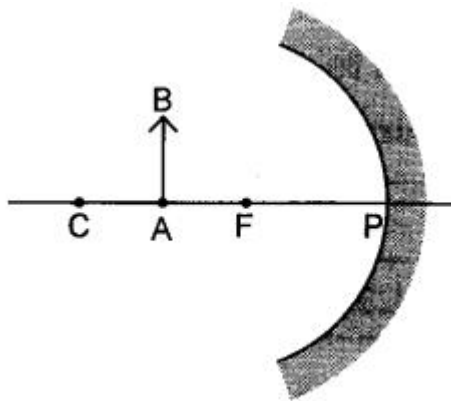
Subject – Science (Physics)

Holiday Homework

1. A concave lens has focal length of 20 cm. At what distance from the lens a 5 cm tall object be placed so that it forms an image at 15 cm from the lens? Also calculate the size of the image formed.
2. If a light ray IM is incident on the surface AB as shown, identify the correct emergent ray.



3. Draw the following diagram in your answer book and show the formation of image of the object AB with the help of suitable rays. [All India]



4. Explain with the help of a diagram, why a pencil partly immersed in water appears to be bent at the water surface.
5. Draw ray diagrams to represent the nature, position and relative size of the image formed by a convex lens for the object placed:
 - (a) at $2F_1$
 - (b) between F_1 and the optical centre O of lens:
6. List four characteristics of the images formed by plane mirrors.
7. Which phenomenon is responsible for making the path of light visible?

8. Which type of mirror is used to give erect and enlarged image of an object?
9. State the laws of refraction of light. If the speed of light in vacuum is $3 \times 10^8 \text{ ms}^{-1}$, find the speed of light in a medium of absolute refractive index 1.5.
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.