INDIAN SCHOOL NIZWA - WORKSHEET

	PHYSICS CH.10 LIGHT – REFLECTION AND REFRACTION	
Name: _____	Date:_____	Class: X

I Multiple choice questions

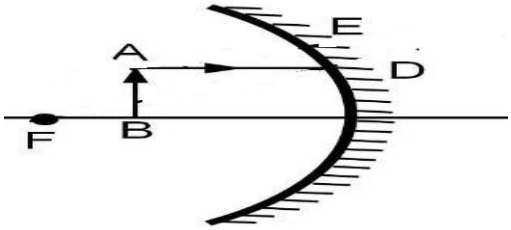
1. Focal length of a concave mirror is:
   a. Always positive
   b. Always negative
   c. Positive when it forms a real image and negative when it forms virtual image.
   d. Positive for erect image and negative for virtual image.
2. Magnification of mirror is +2/3, the type of mirror is:
   a. Concave b. Plane c. convex d. None of these.
3. Radius of curvature of a mirror is 20 cm, it is a:
   a. Convex mirror b. concave mirror c. Plane mirror d. Nothing can be said with certainty.
4. A concave mirror is a part of sphere of radius 20 cm, the focal length of concave mirror is:
   a. 10cm b. 20cm c. -20cm d. -10cm
5. An object 20 cm high is placed at a distance of 90cm from a plane mirror, the size of the image will be:
   a. 20cm b. 90cm c. 180 cm d. 40cm.
6. A concave mirror gives a virtual, erect and magnified image of an object if the object is placed:
   a. At infinity b. Between P and F c. Beyond c d. Between C and F.
7. Magnification produced in the rear-view mirrors fitted in vehicles is:
   a. Less than one b. More than one c. Equal to one d. Depend upon the position of the object placed in front of it.
8. Rays from sun converge at a point 15 cm in front of a concave mirror. Where an object should be placed so that size of its image is equal to the size of the object?
   a. 15 cm in front of the mirror b. 30 cm in front of the mirror c. Between 15 and 30 cm in front of the mirror d. More than 30 cm in front of the mirror.
9. A full-length image of a distant tall building can be seen definitely using:
   a. Concave mirror b. convex mirror c. Plane mirror d. Both concave as well as plane mirror.
10. In torches, search lights and headlights of vehicles the bulb is placed :

a. Between pole and focus of the reflector b. Very near to the focus of the reflector c. Between focus and centre of curvature d. At the centre of curvature.

11. The laws of reflection hold good for:
    a. Plane mirror only b. concave mirror only c. convex mirror only d. All mirrors irrespective of their shape.
12. You are given water, mustard oil, glycerine and kerosene. In which of these media a ray of light incident obliquely at same angle would bend the most?
    a. Kerosene b. Water c. Mustard oil d. Glycerine.
13. A child is standing in front of a magic mirror. She finds the image of her head bigger, the middle portion of her body of the same size and that of the legs smaller. The following is the order of combinations for the magic mirror from the top:
    a. Plane, convex and concave b. Convex, concave and plane c. Concave, plane and convex d. convex plane and concave.
14. In which of the following, the image of an object placed at infinity will be highly diminished and point sized?
    a. concave mirror only b. convex mirror only c. convex lens only d. concave mirror convex mirror, concave lens and convex lens.

ANSWER THE FOLLOWING

1.	Define magnifying power of a mirror.	
2.	Draw a spherical mirror and mark pole, principal focus and centre of curvature.	
3.	A student has three concave mirrors A, B and C of focal lengths 20 cm, 15 cm and 10 cm respectively. For each concave mirror he performs the experiment of mage formation for three values of object distance of 30 cm, 10 cm and 20 cm. Giving reason answer the following: (a) For the three object distances, identify the mirror which will form an image equal in size to that of object. Find at least one value of object distance. (b) Out of the three mirrors, identify the mirror which would be preferred to be used for shaving purpose. (c) For the mirror B, draw ray diagram for image formation for any two given values of object distance.	
4.	A concave mirror of focal length f produces an image n times the size of the object. What would be the object distance for which the image is real?	
5.	List four characteristics of the image formed by a concave mirror of focal length 40cm when the object is placed in front of it at a distance of 20 cm from its pole. (2019 CBSE)	
6.	Draw ray diagram in each of the following cases to show what happens after	

	reflection to the incident ray when (a) It is parallel to the principal axis and falling on a convex mirror. (b) It is falling on a concave mirror while passing through its principal focus (c) It is coming oblique to the principal axis and falling on the pole of a convex mirror. (2020 CBSE – 3 marks)	
7.	(a) Complete the following ray diagram  (b) Find the nature, position and size of the image formed (c) Use mirror formula to determine the magnification in this case. (2020 CBSE – 5 marks)	

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