

**VIDYA BHAVAN, BALIKA VIDYAPEETH**  
**SHAKTI UTTHAN ASHRAM, LAKHISARAI, PIN:-811311**

**SUBJECT:-** PHYSICS

**CLASS:-** XTH

**DATE:**17/10/XX

**SUBJECT TEACHER:- MR. NEEL NIRANJAN**

**CHAPTER 2. (LIGHT - REFLECTION) (BASED ON NCERT PATTERN)**

**(REVISION)**

**Question 1.** (a) Explain why, though both a plane mirror and a sheet of paper reflect light but we can see the image of our face in a plane mirror but not in a sheet of paper.

(b) The image in a plane mirror is virtual and laterally inverted. What does this statement mean ?

(c) Write all the capital letters of the alphabet which look the same in a plane mirror.

**Solution :** (a) We can see the image of our face in a plane mirror but not in a sheet of paper because images are formed by regular reflection of light and in case of a plane mirror, regular reflection takes place; while in case of a sheet of paper, diffuse reflection takes place.

(b) The image is virtual and laterally inverted means it cannot be obtained on a screen and is reversed sideways.

(c) A, H, I, M, O

**Question 2.** A man stands 10 m in front of a large plane mirror. How far must he walk before he is 5 m away from his image ?

**Solution :** Initially, the distance between the man and the mirror is 10m.

So, the distance between man and his image is  $10+10=20\text{m}$

Distance between the man and his image is 5 m when the man is 2.5 m away from the mirror.

Therefore, he has to walk  $10\text{ m} - 2.5\text{m} = 7.5\text{ m}$  towards the mirror.

**Question 3.** A communications satellite in orbit sends a parallel beam of signals down to earth. If these signals obey the same laws of reflection as light and are to be focussed onto a small receiving aerial, what should be the best shape of the metal 'dish' used to collect them ?

**Solution :** Concave metal dish: It will collect the parallel beam of satellite signals at its focus where receiving aerial is fixed.