

## Solution of the day/Oct-9, 2018

### 6<sup>th</sup> Class

- **Mathematics:** Ans: (C)
- **Physics:** Ans: (C)
- **Chemistry:** Ans: (B)
- **Biology:** Ans: (B)

### 7<sup>th</sup> Class

- **Mathematics:** Ans: (A)

**Physics:** Ans: (B)

We know that if the direction of an incident ray remains unchanged, the angle of rotation of the reflected ray is twice the angle of rotation of the mirror. Since the mirror rotates through, the direction of the incident ray being kept unaltered, the reflected ray OB turns through  $2 \times 3.5^\circ = 7^\circ$  as shown in figure.

$$\frac{y}{AO} = \tan 2\theta = \tan 7^\circ \therefore y = AO \tan 7^\circ = 1.5 \times \tan 7^\circ = 0.1842\text{m}$$

- **Chemistry:** Ans: Ductility
- **Biology:** Ans: (B)

### 8<sup>th</sup> class

- **Mathematics:** Ans: (A)

- **Physics:** Sol: The focal length of the lens depends not only on the radii of curvature of its faces but also on the refractive index of its glass and the refractive index of the medium in which it is placed. The focal length  $f$  of a convex lens of refractive index and radii of curvature  $R_1$  and  $R_2$  when placed

in a medium of refractive index is given by  $\frac{1}{f} = \left( \frac{\mu_2 - \mu_1}{\mu_1} \right) \left( \frac{1}{R_1} + \frac{1}{R_2} \right)$

It is easy to see that  $f$  will be more if  $\mu$  is different from unity .

- **Chemistry:** Ans: (D)
- **Biology:** Ans: (D)

## 9<sup>th</sup> Class

➤ **Mathematics:** Ans: (B)

➤ **Physics:**

Ans: We know that, number of images,  $n = \frac{360}{\theta} \Rightarrow n = \frac{360}{72} - 1 = 4$

➤ **Chemistry:** Ans: Aluminium does not corrode and is a very good conductor of heat.

➤ **Biology:** Ans: (B)

## 10<sup>th</sup> class

➤ **Mathematics:** Ans: (D)

➤ **Physics:** Ans:  $\mu = \frac{\sin i}{\sin r} = \sqrt{2}$

➤ **Chemistry:** Ans: (A)

➤ **Biology:** Ans: (C)

➤ **Reasoning :**

Sol. The sequence is a combination of two series.

I 4, 3, 2, ?

II 7, 6, 5

The pattern followed in I is -1, -1, -1\ missing number = 2 - 1 = 1 **Ans. 1**