

## Solution of the day/Sep-15, 2018

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

➤ **Mathematics:**

Sol: Arranging the like terms together, we have  $7a^2 + 5ab + 6b^2$

➤ **Physics:** Ans: (C)

➤ **Chemistry:** Ans: Reversible

➤ **Biology:** Ans: (B)

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

➤ **Mathematics:** Ans: (B)

➤ **Physics:** Ans: (A)

➤ **Chemistry:** Ans: (A, B, D)

➤ **Biology:** Ans: (B)

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

➤ **Mathematics:**

Sol: Consider a  $\triangle ABC$  in which  $\angle B = 90^\circ$ ,  $AB = 5$  cm and  $(BC + AC) = 25$  cm.

Let  $BC = x$  cm. Then,  $AC = (25 - x)$  cm.

By Pythagoras' theorem, we have  $AB^2 + BC^2 = AC^2$

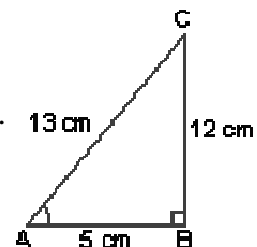
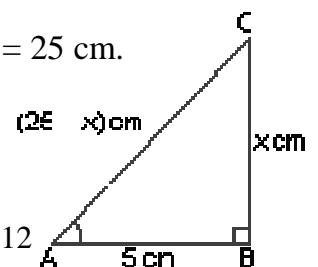
$$\Rightarrow (5)^2 + x^2 = (25 - x)^2 \Rightarrow 25 + x^2 = 625 + x^2 - 50x \Rightarrow 50x = 600 \Rightarrow x = 12$$

$\therefore$   $BC = 12$  cm,  $AC = (25 - 12)$  cm =  $13$  cm and  $AB = 5$  cm.

In  $\triangle ABC$  for  $\angle A$ , we have base =  $AB = 5$  cm,

perpendicular =  $BC = 12$  cm, and hypotenuse =  $AC = 13$  cm.

$$\therefore \sin A = \frac{BC}{AC} = \frac{12}{13}, \cos A = \frac{AB}{AC} = \frac{5}{13} \text{ and } \sec A = \frac{AC}{AB} = \frac{13}{5}.$$



➤ **Physics:** Ans: Non uniform velocity

➤ **Chemistry:** Ans: (A)

➤ **Biology:** Ans: (A)

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

➤ **Mathematics:**

Sol: (B) Given that  $\sin \alpha + \cos \alpha = 2 \Rightarrow \sin^2 \alpha - 2 \sin \alpha + 1 = 0 \Rightarrow \sin \alpha = 1 = \cos \alpha$

$$\therefore \sin^n \alpha + \cos^n \alpha = 2$$

➤ **Physics:** Ans: A-b, B-a, C-d, D-c

➤ **Chemistry:** Ans: (B)

➤ **Biology:** Ans: (B)

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

➤ **Mathematics:**

Sol:  $\cos 30^\circ \cos 45^\circ - \sin 30^\circ \sin 45^\circ$

$$\frac{\sqrt{3}}{2} \times \frac{1}{\sqrt{2}} - \frac{1}{2} \times \frac{1}{\sqrt{2}} = \frac{\sqrt{3}}{2\sqrt{2}} - \frac{1}{2\sqrt{2}} = \frac{\sqrt{3} \times \sqrt{2}}{4} - \frac{\sqrt{2}}{4} = \frac{\sqrt{6} - \sqrt{2}}{4}$$

➤ **Physics:** Ans: a-u, b-t, c-s, d-r, e-q, f-p

➤ **Chemistry:** Ans: (C)

➤ **Biology:** Ans: (B)

➤ **Reasoning :**

Sol : (D) Numbers go down by five each time.