

## P hysicsaholics



## DPP - 4(Vectors)

Video Solution on Website:-

https://physicsaholics.com/home/courseDetails/43

Video Solution on YouTube:-

https://youtu.be/Dfcht3Z-kgQ

Written Solution on Website:-

https://physicsaholics.com/note/notesDetalis/84

- Q 1. If  $\vec{A} \times \vec{B} = \vec{C}$ , then which of the following statements is wrong:
  - (a)  $\vec{C} \perp \vec{A}$

(b)  $\vec{C} \perp \vec{B}$ 

(c)  $\vec{C} \perp (\vec{A} + \vec{B})$ 

- (d)  $\vec{C} \perp (\vec{A} \times \vec{B})$
- Q 2. If two vectors  $2\hat{i} + 3\hat{j} \hat{k}$  and  $-4\hat{i} 6\hat{j} \lambda \hat{k}$  are parallel to each other then value of  $\lambda$  be:
  - (a) 0
- (b) -2
- (c).3
- (d) -4

- Q 3. What is the value of  $(\vec{A} + \vec{B}) \cdot (\vec{A} \times \vec{B}) = ?$ 
  - (a) 0
  - (a) G(c)  $A^2 + B^2 + 2AB$

- (b)  $A^2 B^2$
- (d) None of these
- Q 4. Let  $\vec{A} = \hat{\imath} + \hat{\jmath} + \hat{k}$ ,  $\vec{B} = \hat{\jmath} \hat{k}$ . If  $\vec{C}$  is a vector satisfying  $\vec{A} \times \vec{C} = \vec{B}$  and  $\vec{A}$ .  $\vec{C} = 3$ , then  $\vec{C}$  is:
  - (a)  $\frac{1}{3}(5\hat{i} + 2\hat{j} + 2\hat{k})$
- (b)  $\frac{1}{3}(5\hat{\imath}-2\hat{\jmath}-2\hat{k})$

(c)  $3\hat{i} - \hat{j} - \hat{k}$ 

- (d) None of these
- Q 5. The vector perpendicular to the vectors  $4\hat{i} \hat{j} + 3\hat{k}$  and  $-2\hat{i} + \hat{j} 2\hat{k}$  whose magnitude is 9:
  - (a)  $3\hat{\imath} + 6\hat{\jmath} 6\hat{k}$

(b)  $3\hat{i} - 6\hat{j} + 6\hat{k}$ 

 $(c) -3\hat{\imath} + 6\hat{\jmath} + 6\hat{k}$ 

- (d) None of these
- Q 6. Find  $\vec{a} \times (\vec{b} + \vec{c}) + \vec{b} \times (\vec{c} + \vec{a}) + \vec{c} \times (\vec{a} + \vec{b}) = ?$ 
  - (a)  $\vec{a} + \vec{b} + \vec{c}$

- (b)  $\vec{a} \cdot (\vec{a} + \vec{b} + \vec{c})$
- (c)  $(\vec{a} \cdot \vec{b} \cdot \vec{c}) \times (\vec{a} + \vec{b} + \vec{c})$
- (d) zero
- Q 7. Find  $[2\hat{\jmath} \times (3\hat{\imath} 4\hat{k})] \cdot [(\hat{\imath} 2\hat{k}) \times \hat{k}] = ?$ 
  - (a) 0

(b)  $\hat{i} + \hat{j} - \hat{k}$ 

(c)  $2\hat{i} + \hat{j} - 3\hat{k}$ 

- (d) 16
- Q 8. Find  $\hat{\imath} \cdot (\hat{\jmath} \times \hat{k}) + (\hat{\imath} \times \hat{k}) \cdot \hat{\jmath} = ?$ 
  - (a)  $2\hat{\imath} + \hat{\jmath}$

(b) 1

(c) 0

(d)  $\hat{i} + \hat{j} + \hat{k}$ 



## hysicsaholics



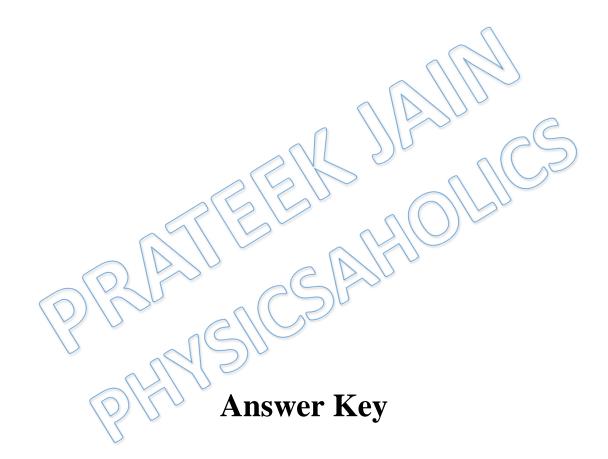
- If  $|\vec{a}| = 13$ ,  $|\vec{b}| = 5$  and  $\vec{a} \cdot \vec{b} = 30$ , then  $|\vec{a} \times \vec{b}| = ?$ (a) 30 (b)  $\frac{30}{25}\sqrt{233}$ (c)  $\frac{30}{33}\sqrt{193}$  (d)  $\frac{65}{13}\sqrt{133}$ Q 9.

- Q 10. Vector  $\vec{A}$  &  $\vec{B}$  have scalar product 6.00 and their vector product has magnitude +9.00 What is the angle between these two vectors?
  - (a)  $tan^{-1}(1.5)$

(b)  $tan^{-1}(3)$ 

(c)  $tan^{-1}(2)$ 

(d)  $\tan^{-1}\left(\frac{2}{3}\right)$ 



Q.1 d	Q.2 b	Q.3 a	Q.4 a	Q.5 c
Q.6 d	Q.7 a	Q.8 c	Q.9 d	Q.10 a