



## DPP - 4

- 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 (b)  $A^2 - B^2$   
(c)  $A^2 + B^2 + 2AB$  (d) None of these
- Q 4. Let  $\vec{A} = \hat{i} + \hat{j} + \hat{k}$ ,  $\vec{B} = \hat{j} - \hat{k}$ . If  $\vec{C}$  is a vector satisfying  $\vec{A} \times \vec{C} = \vec{B}$  and  $\vec{A} \cdot \vec{C} = 3$ , then  $\vec{C}$  is:  
(a)  $\frac{1}{3}(5\hat{i} + 2\hat{j} + 2\hat{k})$  (b)  $\frac{1}{3}(5\hat{i} - 2\hat{j} - 2\hat{k})$   
(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)  $3\hat{i} + 6\hat{j} - 6\hat{k}$  (b)  $3\hat{i} - 6\hat{j} + 6\hat{k}$   
(c)  $-3\hat{i} + 6\hat{j} + 6\hat{k}$  (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  $[2\hat{j} \times (3\hat{i} - 4\hat{k})] \cdot [(\hat{i} - 2\hat{k}) \times \hat{k}] = ?$   
(a) 0 (b)  $\hat{i} + \hat{j} - \hat{k}$   
(c)  $2\hat{i} + \hat{j} - 3\hat{k}$  (d) 16
- Q 8. Find  $\hat{i} \cdot (\hat{j} \times \hat{k}) + (\hat{i} \times \hat{k}) \cdot \hat{j} = ?$   
(a)  $2\hat{i} + \hat{j}$  (b) 1  
(c) 0 (d)  $\hat{i} + \hat{j} + \hat{k}$
- Q 9. 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 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)  $\tan^{-1}\left(\frac{2}{3}\right)$

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## Answer Key

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