Vector Algebra objective paper (Level -I)(Paper by Om Prakash)

Vector Algebra Objective paper Level- II

your Name :

Srivastava Classes
Objective Test Paper(Vector-Algebra)

Time :$1\frac{1}{2}$**hours** **Max**:**Marks**:**40**

NOTE:

1. *Attempt only twenty questions at a time.*
2. *All questions carry equal marks*
3. *Two marks for each correct answer and one minus for each incorrect answer.*

LEVEL-I

Each question, in this part, has one or more than one correct answer(s). For each question write the letters a, b, c, d corresponding to the correct answer(s).

Notice: 1. For every 10 Question there are 20 minutes **Time**:
2 Each correct answer awarded 3 marks.
3 Each incorrect answer awarded -1 marks.

Accordingly

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1 Angle between $\vec{a} = 2\hat{\imath} + 3\hat{\jmath} + 5\hat{k}$ & $\vec{b} = \hat{\imath} + \hat{\jmath} - \hat{k}$ is :

○ (*a*) $\frac{\pi}{2}$ ○ (*b*) $\frac{\pi}{3}$ ○ (*c*) 0 ○ (*d*) *None*

2 If $\vec{a} = 2\hat{\imath} - \hat{j} + \hat{k}$ & $\vec{b} = \hat{\imath} - 3\hat{j} - s\hat{k}$ are right angled then s is :

○ (*a*) -5 ○ (*b*) 5 ○ (*c*) -15 ○ (*d*) 15

3 If $\left|\vec{a} + \vec{b}\right| = \left|\vec{a} - \vec{b}\right|$ then angle between $\vec{a}$& $\vec{b}$ is

○ (*a*) $\frac{\pi}{2}$ ○ (*b*) $\frac{\pi}{3}$ ○ (*c*) 0 ○ (*d*) *None*

4 If $\vec{a} = 6\hat{\imath} + 2\hat{j} + 3\hat{k}$ & $\vec{b} = 3\hat{\imath} - 5\hat{j} - 2\hat{k}$ then Unit vector perpendicular to $\vec{a}$ & $\vec{b}$ is :

○ (a) $\frac{11\hat{\imath} + 21\hat{j} - 36\hat{k}}{\sqrt{1858}}$ ○ (b) $\frac{3\hat{\imath} - 24\hat{j} + 19\hat{k}}{\sqrt{946}}$ ○ (c) $\frac{19\hat{\imath} + 24\hat{j} - 3\hat{k}}{\sqrt{946}}$ ○ (d) $\frac{19\hat{\imath} + 3\hat{j} + 24\hat{k}}{\sqrt{946}}$

5 If $\vec{a} = 2\hat{\imath} - \hat{j} + \hat{k}$ & $\vec{b} = \hat{\imath} - 3\hat{j} - 5\hat{k}$ then $\vec{a} \times \vec{b}$ is

○ (a) $8\hat{\imath} - 11\hat{j} + 5\hat{k}$ ○ (b) $8\hat{\imath} + 11\hat{j} - 5\hat{k}$ ○ (c) $8\hat{\imath} + 11\hat{j} + 5\hat{k}$ ○ (d)

$8\hat{i} - 11\hat{j} - 5\hat{k}$

6 If θ is angle between $\vec{a} = \hat{i} + 3\hat{j} + 2\hat{k}$ & $\vec{b} = 2\hat{i} - 4\hat{j} + \hat{k}$ then $\sin\theta$ is

○ (a) $\sqrt{\frac{151}{247}}$ ○ (b) $\sqrt{\frac{247}{115}}$ ○ (c) $\sqrt{\frac{125}{147}}$ ○ (d) $\frac{1}{21}\sqrt{345}$

7 $\vec{a} \times (\vec{b} + \vec{c}) + \vec{b} \times (\vec{c} + \vec{a}) + \vec{c} \times (\vec{a} + \vec{b})$ is equal to :

○ (a) $2\vec{b}$ ○ (b) $2\vec{c}$ ○ (c) $2\vec{a}$ ○ (d) 0

8 If $\left|\vec{a}\right| = 7, \left|\vec{b}\right| = 11$ & $\left|\vec{a} + \vec{b}\right| = 10\sqrt{3}$ then $\left|\vec{a} - \vec{b}\right|$ is equal to :

○ (a) $10\sqrt{2}$ ○ (b) $2\sqrt{10}$ ○ (c) $\sqrt{20}$ ○ (d) None

9 For any Vector $\vec{a}$ if written as $\hat{i} \times (\vec{a} \times \hat{i}) + \hat{j} \times (\vec{a} \times \hat{j}) + \hat{k} \times (\vec{a} \times \hat{k})$ which will be Equal to:

○ (a) $2\vec{a}$ ○ (b) 0 ○ (c) $\hat{i} + \hat{j} + \hat{k}$ ○ (d) None

10 If $\vec{u} = \vec{a} - \vec{b}, \vec{v} = \vec{a} + \vec{b}$ & $\left|\vec{a}\right| = \left|\vec{b}\right| = 2$ and angle between $\vec{a}$ & $\vec{b}$ is 90^0 then $\left|\vec{u} \times \vec{v}\right|$ is :

○ (a) 6 ○ (b) 8 ○ (c) 10 ○ (d) None

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