Student Name;----------	Roll No.....	Date...../...../.....
Class 2nd year	Subject : Mathematics	Chapter # 7
T- Marks : 30	Time : 40 mints	Obtain Marks

Q # 1	Circle the correct option		1x7=7				
1	If $\overrightarrow{OA} = \vec{a}, \overrightarrow{OB} = \vec{b}$ then $\overrightarrow{AB}$ =						
a	$\vec{a}$-$\vec{b}$	b	$\vec{a}$+$\vec{b}$	c	$\vec{b}$-$\vec{a}$	d	$\vec{a} \cdot \vec{b}$
2	$\lvert cos\alpha\hat{\imath} + sin\alpha\hat{\jmath} + 0k \rvert$						
a	0	b	-1	c	2	d	1
3	Angle between the vectors $4i + 2j - k$ and $-i + j - 2k$ is						
a	30^0	b	45^0	c	90^0	d	60^0
4	If α, β, γ are the direction angle of a vector then $cos^2\alpha + cos^2\beta + cos^2\gamma =$						
a	2	b	0	c	-1	d	1
5	Non-zero vectors $\vec{a}$ and $\vec{b}$ are parallel if $\vec{a} \times \vec{b} =$;						
a	0	b	1	c	-1	d	(a, b)
6	The triple scalar product of vectors, calculates the volume of ;						
a	Triangle	b	Parallelogram	c	tetrahedron	d	parallelepiped
7	$\hat{\imath} \cdot (\hat{\jmath} \times \hat{\jmath})$= ;						
a	1	b	i	c	0	d	2

Q # 2	Write short answer of following question.	2x7=14
i	Find the unit vector in the direction of $\underline{V} = 2\underline{i} - 3\underline{j}$	
ii	Find a vector whose magnitude is 4 and is parallel to $2\underline{i} - 3\underline{j} + 6\underline{k}$	
iii	Compute $\underline{b} \times \underline{a}$ if $\underline{a} = 2\underline{i} + \underline{j} - \underline{k}, \underline{b} = \underline{i} - \underline{j} + \underline{k}$	
iv	Find the value of α so that the vector $\alpha\underline{i} + \underline{j}, \underline{i} + \underline{j} + 3\underline{k}$ and $2\underline{i} + \underline{j} - 2\underline{k}$ are coplaner ;	
v	Find the value of α so that the vectors $\alpha i + j, i + j + 3k,$ and $2i + j - 2k$ are coplanar;	
vi	If $\vec{v} = 3i - 2j + 2k,$ and $\vec{w} = 5i - j + 3k,$ then find $\lvert 3\vec{v} + \vec{w} \rvert$	
vii	Find a vectors whose magnitude is 4 and is parallel to $2i - j$	

Q # 3	Write detail answer of these questions.	4+5=9

a. If $\vec{a} + \vec{b} + \vec{c} = 0,$ then prove that $\vec{a} \times \vec{b} = \vec{b} \times \vec{c} = \vec{c} \times \vec{a}$

b. Given force $\vec{F} = 2i + j - 3k$ acting at a point A (1,-2, 1) Find the moment of $\vec{F}$ about the point B(2,0,2).