Daily Pro	OPP Practice oblem	Topic : Vector DPP No. 11		Time : 30 min. Total Marks : 56 Max.
Ph	ysics			
	Type of Questions			
<u> </u>		1' negative marking) Q. 1 to (	Q. 14	
Q 1)	The unit vector along $\hat{i} + \hat{j}$			
		B)	$\hat{\boldsymbol{\iota}} + \hat{\boldsymbol{j}}$	
	C) $\frac{\hat{\iota}+\hat{j}}{\sqrt{2}}$	D)	$\frac{\hat{\iota}+\hat{j}}{2}$	
Q 2)	The expression $\frac{1}{\sqrt{2}}\hat{i} + \frac{1}{\sqrt{2}}\hat{j}$	sa		
	A) Unit vector	В)	Null vector	
	C) Vector of magnitude		Scalar	
Q 3)	-	vector $3\hat{\imath} + 4\hat{k}$ on y-axis is		
	A) 5	B)	4	
	C) 3	D)	zero	
Q 4)	If a particle moves from po	oint P (2,3,5) to point Q (3,4,5	i). Its displacement ve	ctor be
	A) $\hat{\iota} + \hat{j} + 10\hat{k}$	В)	,	
	C) $\hat{\iota} + \hat{j}$		$2\hat{\imath} + 4\hat{j} + 6\hat{k}$	
Q 5)	-	$24\hat{j}$ the vector having the same	-	d parallel to A is
	A) $5\hat{\imath} + 20\hat{\jmath}$	B)	$15\hat{\imath} + 10\hat{\jmath}$	
	C) $20\hat{i} + 15\hat{j}$	D)	$15\hat{\imath} + 20\hat{j}$	
Q 6)		ection of cosines of the vecto	r Á are	
	A) $\frac{2}{\sqrt{45}}, \frac{4}{\sqrt{45}} and \frac{-5}{\sqrt{45}}$	В)	$\frac{1}{\sqrt{45}}, \frac{2}{\sqrt{45}}$ and $\frac{3}{\sqrt{45}}$	
	C) $\frac{4}{\sqrt{45}}$ , 0 and $\frac{4}{\sqrt{45}}$	D)	$\frac{1}{\sqrt{45}}, \frac{2}{\sqrt{45}} and \frac{3}{\sqrt{45}}$ $\frac{3}{\sqrt{45}}, \frac{2}{\sqrt{45}} and \frac{5}{\sqrt{45}}$	
Q 7)	VIJ VIJ	per of coplanar vectors havin		s can be added to give zero
Q7)	resultant	Jer of copialiar vectors havin	g unierent magnitude	s can be added to give zero
	A) 2	В)	3	
	C) 4	– , D)	5	
Q 8)		qual to 10 N act on a body. E	ach force makes angle	$e \pi$ / 50 with the preceding
	force. What is the resultan	t of the forces	-	
	A) 1000 N	В)	500 N	
	C) 250 N	D)	Zero	
Q 9)	Given vector $\vec{A} = 2\hat{\imath} + 3\hat{j}$ ,	the angle between $\overrightarrow{A}$ and y-a		
	A) $tan^{-1}3/2$	C)	$tan^{-1}2/3$	
	B) sin <sup>-1</sup> 2/3	D)	$\cos^{-1} 2/3$	
Q 10)	A vector is represented by	$3\hat{\imath} + \hat{j} + 2\hat{k}$ . Its length in XY		
	A) 2	В)	$\sqrt{14}$	
	C) $\sqrt{10}$	D)	$\sqrt{5}$	
Q 11)	The angle made by the ve	tor $ec{A} = \hat{\imath} + \hat{\jmath}$ with x- axis is		
	A) 90°	В)	45°	
	C) 22.5°	D)	30°	
Q 12)	Angular momentum is			
	A) A scalar	B)	A polar vector	
0.42	C) An axial vector	D)	None of these	
Q 13)	If $\vec{P} = \vec{Q}$ then which of the	_		
	A) $\widehat{P} = \widehat{Q}$	B)	$ \vec{P}  =  \vec{Q} $	
	C) $P\widehat{Q} = Q\widehat{P}$	D)	$\overrightarrow{P} + \overrightarrow{Q} = \widehat{P} + \widehat{Q}$	
Q 14)	Which of the following is a	• •		
	A) Displacement	B)	Electric field	
	C) Acceleration	D)	Work	

Daily Practice Problem		-	c : Vector		Time : 30 min.			
	hysics	DPI	P No. 12		Total Marks : 56 Max.			
PI								
	Type of Qu Single cho	ice Objective ('–1' negative marking) (	0. 1 to 0. 14					
1)		ctor is represented by $0.5\hat{i} + 0.8\hat{j} +$						
• /	A) 1		B)	$\sqrt{0.11}$				
	C) $\sqrt{0.0}$	$\overline{01}$	D)	$\sqrt{0.39}$				
(2)	• • •	ector parallel to the resultant of the v	ectors $\vec{A} = 4$	•	$\hat{\imath}+3\hat{\jmath}-8\widehat{k}$ is			
		$(1+6\hat{j}-2\hat{k})$	B)	$\frac{1}{7}(3\hat{\imath}+6\hat{j}+2\hat{k})$	2			
	1	$\hat{i} + 6\hat{j} - 2\hat{k}$		$\frac{1}{49}(3\hat{\imath}-6\hat{\jmath}+2\hat{k})$				
	<b>T</b> )		-,	$\frac{1}{49}(3l-0j+2k)$				
<b>(</b> 3)	Surface ar A) Scala		B)	Vector				
	•	her scalar nor vector	D)	Both scalar and vector				
(4)		between the two vectors $ec{A}=3\hat{\imath}+4j$	,					
	A) 60°							
	C) 90°		D)	None of these				
5)	The position vector of a particle is determined by the expression $\vec{r} = 3t^2\hat{\iota} + 4t^2\hat{j} + 7\hat{k}$ The distance traversed in							
	first 10 sec							
	A) 500		B)	300 m				
	C) 150		D)	100 m				
Q 6)		r parallel to the resultant of vectors $\overline{A}$		and $B = 8i + 8j$ will be $\frac{12i+5j}{2}$				
	13	_	В)	13				
	C) $\frac{6\hat{i}+5\hat{j}}{13}$		D)	None of these				
(7)	The comp	onent of vector $ec{A}=2\hat{\iota}+3\hat{j}$ along th	ne vector $\hat{i}$ +	-ĵis				
	A) $\frac{5}{\sqrt{2}}$	ý <u>-</u>	B)	$10\sqrt{2}$				
	C) $\sqrt[7]{2}{5\sqrt{2}}$		D)	5				
(8)	• • •	between the two vectors $ec{A}=3\hat{\imath}+4j$	,	-	<b>a</b>			
<b>、</b> -/	A) 90°	$\int \frac{1}{2} \int $	B)	0°	-			
	C) 60°		_, D)	45°				
9)	A boy wall	s uniformally along the sides of a rec	tangular par	k of size 400 m× 300 m, s	tarting from one corner to the			
		er diagonally opposite. Which of the	-					
	•	as travelled a distance of 700 m	B)	His displacement is 70				
10	-	lisplacement is 500 m	D)	-	orm throughout the walk			
l 10)	-	forces of 10 N each are applied at one resultant force will be	e point and a	all are lying in one plane.	If the angles between them are			
	A) Zer		B)	10 N				
	C) 20 /		_, D)	$10\sqrt{2}$				
(11)	The magni	tude of a given vector with end point	s (4, -4, 0) a	- •				
	A) 6		B)	$5\sqrt{2}$				
	C) 4		D)	$2\sqrt{10}$				
Q 12)		e moves from point P (2,3,5) to point $\hat{P}$		_				
		$1 + 10\hat{k}$	B)	$\hat{i} + \hat{j} + 5\hat{k}$				
4.21	C) $\hat{i} + j$		D)	$2\hat{i}+4\hat{j}+6\hat{k}$	the country of the second s			
13)	_	5 N acts on a particle along a direction	-	-	i. its vertical component be			
	A) 10 N C) 4 N		B) D)	3 N 2.5 N				
(14)	•	nakes equal angles with x, y and z axis	•		f magnitude of $\vec{A}$ ) will be			
,		ianes equal angles with x, y and Z dxis	B)	-	magintude of A j will be			
	$\sqrt{3}$		-	$\frac{\frac{A}{\sqrt{2}}}{\frac{\sqrt{3}}{A}}$				
	C) $\sqrt{3}A$		D)	$\sqrt{3}$				

	DPP Practice	Topic : Mathemat	ical T		Time : 30 min.
-	oblem	DPP No. 1	DOIS	Total Marks : 56 Max.	
Pl	hysics				
	Type of Q	uestions			
		ice Objective ('-1' negative marking) Q. 1 to			
Q 1)	-	ect to a rectangular cartesian coordinate sys	tem, tl	hree vectors are expressed as	
		$\hat{j}, \ \vec{b} = -3\hat{\iota} + 2\hat{j} \ and \ \vec{c} = -\hat{k}$ $\hat{k}$ are unit vectors, along the X, Y and Z-axis	rocno	tively. The unit vectors $\hat{x}$ alon	a the direction of sum of
	these vect	· • •	respe		g the direction of sum of
	A) $\hat{r} =$	$\frac{1}{\sqrt{2}}(\hat{i}+\hat{j}-\hat{k})$	B)	$\hat{r} = \frac{1}{\sqrt{2}} (\hat{\iota} + \hat{\iota} - \hat{k})$	
		$\frac{\sqrt{3}}{2}(\hat{\iota}-\hat{j}+\hat{k})$	D)	$egin{aligned} \hat{r} &= rac{1}{\sqrt{2}}ig(\hat{\iota}+\hat{j}-\widehat{k}ig) \ \hat{r} &= rac{1}{\sqrt{2}}ig(\hat{\iota}+\hat{j}+\widehat{k}ig) \end{aligned}$	
Q 2)		$a_3 (c^2 - f^2 + a^2)$ on vector of a particle is $\vec{r} = (a \cos \omega t)\hat{i} + a^2$			ticle is
~=,		illel to the position vector	B)	Perpendicular to the positio	
	C) Dire	cted towards the origin	D)	Directed away from the orig	in
Q 3)		two force vectors, one of 5 N and other of 1	2 N at	what angle the two vectors be	added to get resultant
		L7 N, 7 N and 13 N respectively 80° and 90°	B)	0°, 90° and 180°	
		0° and 90°	D)	•	
Q 4)		avelling due north at 20 m/s turns west and t		-	e in its velocity be
	A) 40 n	n/s N–W	B)	20 $\sqrt{2}$ m/s N–W	
		n/s S–W	D)	20 $\sqrt{2}$ m/s S–W	
Q 5)		of two unit vectors is a unit vector, then ma	-	-	
	A) $\sqrt{2}$ C) $1/\sqrt{2}$		B) D)	$\sqrt{3}$ $\sqrt{5}$	
Q 6)		$\hat{j}, \vec{B} = 3\hat{j} - \hat{k} \text{ and } \vec{C} = 6\hat{i} - 2\hat{k}. \text{ Value of } \vec{J}$			
20)		$f_{j} = 5j - k \ unu \ C = 5i - 2k. v \ unu \ 0j \ 2k + 5j + 4k$		$20\hat{\imath} - 5\hat{\jmath} - 4\hat{k}$	
		$-5\hat{j}+20\hat{k}$	-, D)	$5\hat{\imath} + 4\hat{\jmath} + 10\hat{k}$	
Q 7)		s, each of magnitude F have a resultant of th		e magnitude F. The angle betw	een the two forces is
	A) 45°		B)	120°	
Q 8)	C) 150°	sultant of the two vectors to be maximum, v	D) vhat m	60° Just he the angle between the	m
(1)	A) 0°		B)	60°	
	C) 90°		D)	180°	
Q 9)		is simultaneously acted by two forces equal			particle is
	A) 7 N C) 1 N		B)	5 N Between 1 N to 7 N	
Q 10)	•	Itant of the two forces has a magnitude sma	D) ller th		ce. the two forces must be
~~~/		erent both in magnitude and direction	B)	Mutually perpendicular to o	
		ess extremely small magnitude	D)	Point in opposite directions	
Q 11)	•	$ = ec{A} = ec{B} $ , the angle between $ec{A}$ and			
	A) 60° C) 0°		B) D)	120° 90°	
Q 12)	-, -	ant of two vectors $\overrightarrow{P}$ and $\overrightarrow{Q}$ is $\overrightarrow{R}$ . If Q is doub	•		lar to P. Then R equals
-, - <i>-</i> /	A) P		в)	(P+Q)	iui to ri men n'equais
	c) Q		D)	$(\boldsymbol{P}-\boldsymbol{Q})$	
Q 13)		e of vector which comes on addition of two			
	A) $\sqrt{13}$		B)	$\sqrt{202}$	
Q 14)	C) $\sqrt{13}$	5.2 and F2 act on a point mass in two mutually p	D) ernen/	$\sqrt{160}$	t force on the noint mass
Q 14J	will be	ma i 2 act on a point mass in two mutually p	ci pent		to the point mass
	A) F <sub>1</sub> +	F2	B)	<b>F</b> <sub>1</sub> - <b>F</b> <sub>2</sub>	
	C) $F_{1}^{2}$	$+ F_2^2$	D)	$F_1^2 + F_2^2$	
	$\sqrt{11}$	· - Z			

ProblemTotal Marks: 56 Hax.Type of Questions Single choice Objective ('-1' negative marking) Q, 1 to Q. 11Total Marks: 56 Hax.10A particle has displacement of 12 m towards east and 5 m towards north then 6 m vertically upward. The sum of these displacement of 12 m towards east and 5 m towards north then 6 m vertically upward. The sum of these(2)For the figure14.31 m $\overline{P} + \overline{P} = \overline{A}$ (2)For the figure $\overline{P} + \overline{A} = \overline{B}$ $\overline{P} + \overline{A} = \overline{A}$ (3)The three vectors $\overline{A} = 31 - 2j + \overline{K}$ , $\overline{B} = i - 3j + 5K$ and $\overline{C} = 2i + j - 4\overline{K}$ form $0$ (4)An equilitarial triangle $0$ No triangle(3)The three vectors $\overline{A} = 31 - 2j + \overline{K}$ , $\overline{B} = i - 3j + 5K$ and $\overline{C} = 2i + j - 4\overline{K}$ form $0$ (4)The magnitude of vector $\overline{A}$ , $\overline{B}$ and $\overline{C}$ are respectively 12, 5 and 13 units and $\overline{A} + \overline{B} = \overline{C}$ then the angle between $\overline{A}$ and $\overline{B}$ is $A_1$ $0$ (5)An object of m kg with speed of $v$ m/s strikes a wall at an angle B and rebunds at the same speed and tame angle. The magnitude of the change in momentum of the object will be An object of m kg with speed of the shares $\overline{A}$ and $\overline{B}$ with $\theta$ as the angle between them is $A^2 + B^2 + 2ABCOS \theta$ $O$ (4)The value of the sum of two vectors $\overline{A}$ and $\overline{B}$ with $\theta$ as the angle between them is $A^2 + B^2 + 2ABCOS \theta$ (5)No triangleD) $\sqrt{A^2 + B^2 + 2ABCOS \theta}$ (7)Following sits of three forces act an a body. Whose resultant cannot be zero(8)The sum of two torces acting at a point is 16 N. If the resultant force is N and ts direction is perpendicular to minimum force the number forces of 50 N, 30 N a		DPP / Practice	Tonic : I	Mathematical Toc	nis	Time : 30 min.
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Pr	oblem				
Q1A particle has displacement of 12 m towards east and 5 m towards north then 6 m vertically upward. The sum of these displacements is A) 12 m (C) 10.04 mA) 13.31 m 				1 += 0 11		
displacements is A) $22m$ (C) 10.04 m (D) None of these (C) $\overline{B} + \overline{C} = \overline{A}$ (D) $\overline{A} + \overline{B} = \overline{C}$ (E) $\overline{C} + \overline{A} = \overline{B}$ (C) $\overline{B} + \overline{C} = \overline{A}$ (D) $\overline{A} + \overline{B} + \overline{C} = 0$ (Q) $\overline{A} + \overline{B} = \overline{C}$ (Q) $\overline{A} + \overline{A} = \overline{B}$ (Q) $\overline{A} + \overline{A} = \overline{A}$ (Q) $\overline{A} + \overline{A} = \overline{A} = \overline{A}$ (Q) $\overline{A} + \overline{A} = \overline{A} = \overline{A}$ (Q) $\overline{A} + \overline{A} = \overline{A} = \overline{A} = \overline{A}$ (Q) $\overline{A} + \overline{A} = \overline{A} = \overline{A} = \overline{A}$ (Q) $\overline{A} + \overline{A} = \overline{A} = \overline{A} = \overline{A} = \overline{A}$ (Q) $\overline{A} + \overline{A} = \overline{A} =$	0 1)				north then 6 m vertically upward	. The sum of these
(c) 10.04 m (c) (c) 10.04 m (c) (c) 10.04 m (c) (c) $\overline{B} + \overline{C} = \overline{A}$ (c) $\overline{B} + \overline{C} = \overline{A}$ (c) $\overline{A} + \overline{B} = \overline{C}$ (c) $\overline{B} + \overline{C} = \overline{A}$ (c) $\overline{A} + \overline{B} + \overline{A} = \overline{B}$ (c) $\overline{A} + \overline{B} + \overline{A} = \overline{B}$ (c) $\overline{A} + \overline{A} = \overline{A}$ (c) $\overline{A} + \overline{A} = \overline{A} + \overline{A} = \overline{A}$ (c) $\overline{A} + \overline{A} = \overline{A} + \overline{A} = \overline{A}$ (c) $\overline{A} + \overline{A} + \overline{A} = \overline{A} + \overline{A} = \overline{A} + \overline{A} = \overline{A}$ (c) $\overline{A} + \overline{A} + \overline{A} = \overline{A} + \overline{A} + \overline{A} = \overline{A} + \overline{A} = \overline{A} + \overline{A} = \overline{A} + \overline{A} = \overline{A} + \overline{A} + \overline{A} = \overline{A} + \overline{A} = \overline{A} + \overline{A} = \overline{A} + \overline{A} = \overline{A} + \overline{A} + \overline{A} = \overline{A} + A$	~-/				······································	
Q.2) For the figure $ \begin{array}{c} \hline a \\ \hline c \\ c \\ \hline c \\ \hline c \\ \hline c \\ c $						
A) $\overline{A} + \overline{B} = \overline{C}$ B) $\overline{C} + \overline{A} = \overline{B}$ C) $\overline{B} + \overline{C} = \overline{A}$ D) $\overline{A} + \overline{B} + \overline{C} = 0$ C3) The three vectors $\overline{A} = 3i - 2j + \overline{k}$ , $\overline{B} = i - 3j + 5\overline{k}$ and $\overline{C} = 2i + j - 4\overline{k}$ form A) An equilateral triangle C4) An equilateral triangle C5) An object of mt g with speed of w m/s strikes a wall at an angle 6 and rebounds at the same speed and same angle. The magnitude of the change in momentum of the object will be An object of mt g with speed of w m/s strikes a wall at an angle 6 and rebounds at the same speed and same angle. The magnitude of the change in momentum of the object will be An object of mt g with speed of w m/s strikes a wall at an angle 6 and rebounds at the same speed and same angle. The magnitude of the change in momentum of the object will be A) 0 m $\pi/4$ C5) An object of mt g with speed of w m/s strikes a wall at an angle 6 and rebounds at the same speed and same angle. The magnitude of the change in momentum of the object will be A) 2 m v cos0 B) 2 m v C46) The value of the sum of two vectors $\overline{A}$ and $\overline{B}$ with $\theta$ as the angle between them is A) $\sqrt{A^2 + B^2 + 2ABCsn} 0$ C) $10, 20, 20$ C) $10, 20, 23$ C) $10, 20, 21$ C) $10, 20, 21$ C) $10, 20, 21$ C) $10, 20, 21$ C) $10$	0.3)	•		D)	None of these	
A) $\vec{A} + \vec{B} = \vec{C}$ B) $\vec{C} + \vec{A} = \vec{B}$ C) $\vec{B} + \vec{C} = \vec{A}$ D) $\vec{A} + \vec{B} + \vec{C} = 0$ C) $\vec{B} + \vec{C} = \vec{A}$ D) $\vec{A} + \vec{B} + \vec{C} = 0$ C) $\vec{A} + \vec{B} + \vec{C} = 0$ C) $\vec{A} + \vec{B} + \vec{C} = 0$ C) $\vec{A} + \vec{B} + \vec{C} + \vec{A} = \vec{B}$ C) $\vec{A} + \vec{B} + \vec{C} + \vec{A} = \vec{D}$ C) $\vec{A} + \vec{B} + \vec{C} + \vec{A} = \vec{D}$ C) $\vec{A} + \vec{B} + \vec{C} + \vec{A} = \vec{D}$ C) $\vec{A} + \vec{B} + \vec{C} + \vec{A} = \vec{D}$ C) $\vec{A} + \vec{B} + \vec{C} + \vec{A} = \vec{D}$ C) $\vec{A} + \vec{B} + \vec{C} + \vec{A} = \vec{D}$ C) $\vec{A} + \vec{B} + \vec{C} + \vec{A} = \vec{D}$ C) $\vec{A} + \vec{B} + \vec{C} + \vec{A} = \vec{D}$ C) $\vec{A} + \vec{B} + \vec{A} = \vec{D}$ C) $\vec{A} + \vec{B} + \vec{A} = \vec{D}$ C) $\vec{A} + \vec{A} = \vec{A} = \vec{A} + \vec{B} + \vec{A} = \vec{A} = \vec{A} + \vec{A} = \vec{A} = \vec{A} = \vec{A} + \vec{A} = A$	Q 2)	For the fig	ire	ċ	, B	
C) $\vec{B} + \vec{C} = \vec{A}$ D) $\vec{A} + \vec{B} + \vec{C} = 0$ C3) The three vectors $\vec{A} = 3i - 2j + \hat{k}$ , $\vec{B} = i - 3j + 5\hat{k}$ and $\vec{C} = 2i + j - 4\hat{k}$ . form A) An equilateral triangle B isosceles triangle C C) A right angled triangle D) No triangle C) A right angled triangle D) No triangle C) A right angled triangle D) No triangle C) A right angle triangle C) No triangle C) A robject of m kg with speed of v m/s strikes a wall at an angle 0 and rebounds at the same speed and same angle. The magnitude of the change in momentum of the object will be An object of m kg with speed of v m/s strikes a wall at an angle 0 and rebounds at the same speed and same angle. The magnitude of the change in momentum of the object will be An object of m kg with speed of v m/s strikes a wall at an angle 0 and rebounds at the same speed and same angle. The magnitude of the change in momentum of the object will be A) $2 \text{ m v cos}\theta$ B) $2 \text{ m v sin}\theta$ C) $0$ The value of the sum of two vectors $\vec{A}$ and $\vec{B}$ with 0 as the angle between them is A) $\sqrt{A^2 + B^2 + 2ABCOS}\theta$ B) $(\sqrt{A^2 + B^2 + 2ABCOS}\theta)$ C) $\sqrt{A^2 + B^2 + 2ABCOS}\theta$ C) $\sqrt{A^2 + B^2 - 2ABS(T)}\theta$ D) $\sqrt{A^2 + B^2 + 2ABCOS}\theta$ C) $\sqrt{A^2 + B^2 - 2ABS(T)}\theta$ D) $\sqrt{A^2 + B^2 - 2ABS(T)}\theta$ C) $10, 20, 23$ C) $4 \text{ And } 12 \text{ N}$ C) $5 \text{ average at the n} [\vec{A}]$ C) $(5 \text{ average at the n} [\vec{A}$				$\vec{A}$		
Q3)The three vectors $\vec{A} = 3i - 2j + \vec{k}$ , $\vec{B} = i - 3j + 5\vec{k}$ and $\vec{C} = 2i + j - 4\vec{k}$ formA)An equilateral triangleB)C)Aright angled triangleD)C4)The magnitude of vector $\vec{A}$ , $\vec{B}$ and $\vec{C}$ are respectively 12, 5 and 13 units and $\vec{A} + \vec{B} = \vec{C}$ then the angle between $\vec{A}$ and $\vec{B}$ isA)0B) $\pi$ C) $\pi/2$ D) $\pi/4$ Q5)An object of m kg with speed of v m/s strikes a wall at an angle 0 and rebounds at the same speed and same angle. The magnitude of the change in momentum of the object will be A no bject of m kg with speed of v n/s strikes a wall at an angle 0 and rebounds at the same speed and same angle. The magnitude of the change in momentum of the object will beA)2 m v cos0B)2 m v sin0C)002 m vC)002 m vA) $\sqrt{A^2 + B^2 + 2ABCos 0}$ D) $\sqrt{A^2 + B^2 + 2ABCos 0}$ C) $\sqrt{A^2 + B^2 + 2ABCos 0}$ D) $\sqrt{A^2 + B^2 + 2ABCos 0}$ C)( $\sqrt{A^2 + B^2 + 2ABCos 0}$ D) $\sqrt{A^2 + B^2 + 2ABCos 0}$ C)( $\sqrt{A^2 + B^2 + 2ABCos 0}$ D) $\sqrt{A^2 + B^2 + 2ABCos 0}$ C)( $\sqrt{A^2 + B^2 + 2ABCos 0}$ D) $\sqrt{A^2 + B^2 + 2ABCos 0}$ C)( $\sqrt{A^2 + B^2 + 2ABCos 0}$ D) $\sqrt{A^2 + B^2 + 2ABCos 0}$ C)( $\sqrt{A^2 + B^2 + 2ABCos 0}$ D) $\sqrt{A^2 + B^2 + 2ABCos 0}$ C)( $\sqrt{A^2 + B^2 + 2ABCos 0}$ D) $\sqrt{A^2 + B^2 + 2ABCos 0}$ C)( $\sqrt{A^2 + B^2 + 2ABCos 0}$ D) $\sqrt{A^2 + B^2 + 2ABCos 0}$ C)( $A^2 + B$				В)		
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A) $ \vec{C} $ is always greater then $ \vec{A} $ B)It is possible to have $ \vec{C}  <  \vec{A} $ and $ \vec{C}  <  \vec{B} $ C)C is always equal to A + BD)C is never equal to A + BQ 11)The resultant of two vectors A and B is perpendicular to the vector A and its magnitude is equal to half the magnitude of vector B. The angle between A and B isA)120°B)C)135°D)None of theseQ 12)If vectors P, Q and R have magnitude 5, 12 and 13 units and $\vec{P} + \vec{Q} = \vec{R}$ , the angle between Q and R is A) $\cos^{-1}\frac{5}{12}$ D) $\cos^{-1}\frac{5}{12}$ C) $\cos^{-1}\frac{5}{12}$ D) $\cos^{-1}\frac{7}{13}$ Q 13)What vector must be added to the two vectors $\hat{i} - 2\hat{j} + 2\hat{k}$ and $2\hat{i} + \hat{j} - \hat{k}$ so that the resultant may be a unit vector along x-axis A) $2\hat{i} + \hat{j} - \hat{k}$ A) $2\hat{i} - \hat{j} + \hat{k}$ D)C) $2\hat{i} - \hat{j} + \hat{k}$ D) $-2\hat{i} - \hat{j} - \hat{k}$ C) $2\hat{i} - \hat{j} + \hat{k}$ D) $-2\hat{i} - \hat{j} - \hat{k}$ C) $2\hat{i} - \hat{j} - \hat{k}$ B) $-2\hat{i} - \hat{j} - \hat{k}$ C) $2\hat{i} - \hat{j} - \hat{k}$ D) $-2\hat{i} - \hat{j} - \hat{k}$ C) $2\hat{i} - \hat{j} + \hat{k}$ D) $-2\hat{i} - \hat{j} - \hat{k}$ Q 14)Maximum and minimum magnitudes of the resultant of two vectors of magnitudes P and Q are in the ratio 3 : 1. Which of the following relations is true A)A)P = 2QB)	Q 10)					
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Q 11)The resultant of two vectors A and B is perpendicular to the vector A and its magnitude is equal to half the magnitude of vector B. The angle between A and B is A) 120° () 135°B) 150° () 135°Q 12)If vectors P, Q and R have magnitude 5, 12 and 13 units and $\overrightarrow{P} + \overrightarrow{Q} = \overrightarrow{R}$ , the angle between Q and R is A) $cos^{-1}\frac{5}{12}$ () $cos^{-1}\frac{5}{12}$ () $cos^{-1}\frac{12}{13}$ B) $cos^{-1}\frac{5}{13}$ () $cos^{-1}\frac{7}{13}$ Q 13)What vector must be added to the two vectors $\hat{i} - 2\hat{j} + 2\hat{k}$ and $2\hat{i} + \hat{j} - \hat{k}$ so that the resultant may be a unit vector along x-axis A) $2\hat{i} + \hat{j} - \hat{k}$ () $2\hat{i} - \hat{j} + \hat{k}$ Q 14)Q 14)Maximum and minimum magnitudes of the resultant of two vectors of magnitudes P and Q are in the ratio 3 : 1. Which of the following relations is true A) $P = 2Q$						
A)120°B)150°C)135°D)None of theseQ 12)If vectors P, Q and R have magnitude 5, 12 and 13 units and $\vec{P} + \vec{Q} = \vec{R}$ , the angle between Q and R isA) $cos^{-1}\frac{5}{12}$ B) $cos^{-1}\frac{5}{13}$ C) $cos^{-1}\frac{12}{13}$ D) $cos^{-1}\frac{7}{13}$ Q 13)What vector must be added to the two vectors $\hat{i} - 2\hat{j} + 2\hat{k}$ and $2\hat{i} + \hat{j} - \hat{k}$ so that the resultant may be a unit vector along x-axisA) $2\hat{i} + \hat{j} - \hat{k}$ B) $-2\hat{i} + \hat{j} - \hat{k}$ C) $2\hat{i} - \hat{j} + \hat{k}$ D) $-2\hat{i} - \hat{j} - \hat{k}$ Q 14)Maximum and minimum magnitudes of the resultant of two vectors of magnitudes P and Q are in the ratio 3 : 1. Which of the following relations is trueB) $P = Q$	Q 11)					alf the magnitude of vector B.
C) $135^{\circ}$ D) None of these Q 12) If vectors P, Q and R have magnitude 5, 12 and 13 units and $\vec{P} + \vec{Q} = \vec{R}$ , the angle between Q and R is A) $\cos^{-1} \frac{5}{12}$ B) $\cos^{-1} \frac{5}{13}$ C) $\cos^{-1} \frac{12}{13}$ D) $\cos^{-1} \frac{7}{13}$ Q 13) What vector must be added to the two vectors $\hat{i} - 2\hat{j} + 2\hat{k}$ and $2\hat{i} + \hat{j} - \hat{k}$ so that the resultant may be a unit vector along x-axis A) $2\hat{i} + \hat{j} - \hat{k}$ B) $-2\hat{i} + \hat{j} - \hat{k}$ C) $2\hat{i} - \hat{j} + \hat{k}$ D) $-2\hat{i} - \hat{j} - \hat{k}$ Q 14) Maximum and minimum magnitudes of the resultant of two vectors of magnitudes P and Q are in the ratio 3 : 1. Which of the following relations is true A) $P = 2Q$ B) $P = Q$		The angle l	petween A and B is			
Q 12)If vectors P, Q and R have magnitude 5, 12 and 13 units and $\overrightarrow{P} + \overrightarrow{Q} = \overrightarrow{R}$ , the angle between Q and R isA) $cos^{-1}\frac{5}{12}$ B) $cos^{-1}\frac{5}{13}$ C) $cos^{-1}\frac{12}{13}$ D) $cos^{-1}\frac{7}{13}$ Q 13)What vector must be added to the two vectors $\hat{i} - 2\hat{j} + 2\hat{k}$ and $2\hat{i} + \hat{j} - \hat{k}$ so that the resultant may be a unit vector along x-axisA) $2\hat{i} + \hat{j} - \hat{k}$ B) $-2\hat{i} + \hat{j} - \hat{k}$ C) $2\hat{i} - \hat{j} + \hat{k}$ D) $-2\hat{i} - \hat{j} - \hat{k}$ Q 14)Maximum and minimum magnitudes of the resultant of two vectors of magnitudes P and Q are in the ratio 3 : 1. Which of the following relations is trueB) $P = Q$		•				
A) $cos^{-1}\frac{5}{12}$ B) $cos^{-1}\frac{5}{13}$ C) $cos^{-1}\frac{12}{13}$ D) $cos^{-1}\frac{7}{13}$ Q 13)What vector must be added to the two vectors $\hat{i} - 2\hat{j} + 2\hat{k}$ and $2\hat{i} + \hat{j} - \hat{k}$ so that the resultant may be a unit vector along x-axisA) $2\hat{i} + \hat{j} - \hat{k}$ B) $-2\hat{i} + \hat{j} - \hat{k}$ C) $2\hat{i} - \hat{j} + \hat{k}$ D) $-2\hat{i} - \hat{j} - \hat{k}$ Q 14)Maximum and minimum magnitudes of the resultant of two vectors of magnitudes P and Q are in the ratio 3 : 1. Which of the following relations is trueA) $P = 2Q$ B) $P = Q$	0 12)	-				
Q 13) What vector must be added to the two vectors $\hat{i} - 2\hat{j} + 2\hat{k}$ and $2\hat{i} + \hat{j} - \hat{k}$ so that the resultant may be a unit vector along x-axis A) $2\hat{i} + \hat{j} - \hat{k}$ B) $-2\hat{i} + \hat{j} - \hat{k}$ C) $2\hat{i} - \hat{j} + \hat{k}$ D) $-2\hat{i} - \hat{j} - \hat{k}$ Q 14) Maximum and minimum magnitudes of the resultant of two vectors of magnitudes P and Q are in the ratio 3 : 1. Which of the following relations is true A) $P = 2Q$ B) $P = Q$	Q 12)					
Q 13) What vector must be added to the two vectors $\hat{i} - 2\hat{j} + 2\hat{k}$ and $2\hat{i} + \hat{j} - \hat{k}$ so that the resultant may be a unit vector along x-axis A) $2\hat{i} + \hat{j} - \hat{k}$ B) $-2\hat{i} + \hat{j} - \hat{k}$ C) $2\hat{i} - \hat{j} + \hat{k}$ D) $-2\hat{i} - \hat{j} - \hat{k}$ Q 14) Maximum and minimum magnitudes of the resultant of two vectors of magnitudes P and Q are in the ratio 3 : 1. Which of the following relations is true A) $P = 2Q$ B) $P = Q$		A) COS	12 12		$\cos^{-1}\frac{1}{13}$	
A) $2\hat{\imath} + \hat{j} - \hat{k}$ B) $-2\hat{\imath} + \hat{j} - \hat{k}$ C) $2\hat{\imath} - \hat{j} + \hat{k}$ D) $-2\hat{\imath} - \hat{j} - \hat{k}$ Q 14)Maximum and minimum magnitudes of the resultant of two vectors of magnitudes P and Q are in the ratio 3 : 1. Which of the following relations is trueB) $P = Q$ A) $P = 2Q$ B) $P = Q$		C) cos	$-1\frac{12}{13}$	D)	$\cos^{-1}\frac{7}{13}$	
<ul> <li>Q 14) Maximum and minimum magnitudes of the resultant of two vectors of magnitudes P and Q are in the ratio 3 : 1. Which of the following relations is true</li> <li>A) P = 2Q</li> <li>B) P = Q</li> </ul>	Q 13)				$\hat{k}+\hat{j}-\widehat{k}$ so that the resultant matrix	ay be a unit vector along x-axis
<ul> <li>Q 14) Maximum and minimum magnitudes of the resultant of two vectors of magnitudes P and Q are in the ratio 3 : 1. Which of the following relations is true</li> <li>A) P = 2Q</li> <li>B) P = Q</li> </ul>		C) 2 <i>î</i> –	$\hat{j} + \hat{k}$	D)	$-2\hat{\imath}-\hat{\jmath}-\hat{k}$	
	Q 14)	Maximum	and minimum magnitudes of the resul			e ratio 3 : 1. Which of the
C) P Q=1 D) None of these		-	-		•	
		C) P Q=	-1	D)	None of these	

Daily Pro	DPP Practice oblem hysics	Topic : Mathemat DPP No. 1	Time : 30 min. Total Marks : 56 Max.		
	Type of Q	uestions ice Objective ('–1' negative marking) Q. 1 to	0 14		
Q 1)		The angle between $\vec{P}$ and the resultant of ( $\vec{P}$		nd $(\vec{P}-\vec{Q})$	
	A) Zero	)	B)	tan <sup>-1</sup> (P/Q)	
<b>a a</b> )	•	¹(Q/P)	D)	tan <sup>-1</sup> (P-Q)/(P+Q)	
Q 2)		ant of $ec{P}$ and $ec{Q}$ is perpendicular to $ec{P}$ . What $^{-1}(P/Q)$	is the a B)	angle between $P$ and $Q$ $cos^{-1}(-P/Q)$	
		(I/Q) $^{-1}(P/Q)$	D)	$sin^{-1}(-P/Q)$	
Q 3)	Two vecto	ors $\vec{A}$ and $\vec{B}$ lie in a plane, another vector $\vec{C}$ li	es out	side this plane, then the resul	tant of these three vectors
	i.e., $\vec{A} + \vec{B}$				
	A) Can C) Lies		B)	Cannot be zero	Ť.
Q 4)		in the plane containing $\vec{A} + \vec{B}$ s, F <sub>1</sub> and F <sub>2</sub> are acting on a body. One force is	D) s doub	Lies in the plane containing le that of the other force and	
Q 4)		rce. Then the angle between the two forces			the resultant is equal to the
		(1/2)	B)	$cos^{-1}(-1/2)$	
0.5)		$^{-1}(-1/4)$		$\cos^{-1}(1/4)$	
Q 5)		t $ec{A} + ec{B} = ec{C}$ and that $ec{C}$ is $ot$ to $ec{A}$ . Further if   $adian$	A   = B)	$\begin{bmatrix} C \\ \frac{\pi}{2} \end{bmatrix}$ , then what is the angle b	etween A and B
	4	radian	D)	$\frac{1}{2}$ radian	
Q 6)					
Q 0)	A body is A) $4\hat{\iota}$ -	at rest under the action of three forces, two $\vdash 6\hat{i}$	B)	ch are $F_1 = 4l$ , $F_2 = 6j$ the $4\hat{l} - 6\hat{j}$	third force is
	-	$\hat{c} + 6\hat{j}$	-, D)	$-4\hat{\iota}-6\hat{j}$	
Q 7)	-	revolving around the earth with a speed of	100 km	n/hr at a constant height from	the surface of earth. The
	-	the velocity as it travels half circle is km/hr	B)	150 km/hr	
	-	$\sqrt{2}$ km / hr	D)	0	
Q 8)		placement must be added to the displacement	, nt 25î	$-6\hat{j}$ m to give a displacemen	t of 7.0 m pointing in the x-
	direction				
	•	$(-6\hat{j})$ $(3\hat{i}+6\hat{j})$	B) D)	$32\hat{\imath} - 13\hat{\jmath} \\ -25\hat{\imath} + 13\hat{\jmath}$	
Q 9)	-	oves due East with velocity 20 km/hour and	•	-	/hour. The resultant
	velocity				
	-	n/hour m/hour	B) D)	15 km/hour 25 km/hour	
Q 10)		itudes of vectors, $\vec{A}$ , $\vec{B}$ and $\vec{C}$ are 3, 4 and			e angle between
	$\vec{A}$ and $\vec{B}$				
	A) $\frac{\pi}{2}$		B)	$cos^{-1}(0.6)$	
	C) tan	$L^{-1}\left(\frac{7}{5}\right)$	D)	$\frac{\pi}{4}$	
Q 11)		velling from one station to another, a car trav	vels 75	km North, 60 km North-east	and 20 km East. The
		distance between the two stations is			
	A) 72 k C) 132		B) D)	112 km 155 km	
Q 12)	•	going due east at 10 ms <sup>-1</sup> turns right throug			e scooter remains
	unchange	d in taking turn, the change is the velocity of	f the so	cooter is	
		) ms $^{-1}$ south eastern direction	B)	10.0 ms <sup>-1</sup> in southern direc	tion
Q 13)	•	14 ms <sup>-1</sup> in south-west direction goes 10 km north and 20 km east. What will	D) be disı	Zero placement from initial point	
ų 19j	-	36 km	B)	2 km	
	C) 5 kr	n	D)	20 km	
Q 14)		s $\vec{F}_1 = 5\hat{\imath} + 10\hat{\jmath} - 20\hat{k}$ and $\vec{F}_2 = 10\hat{\imath} - 5\hat{\jmath}$	) — 151	$\hat{k}$ act on a single point. The an	gle between ${ar F_1}$ and ${ar F_2}$ is
	nearly A) 30°		B)	45°	
	C) 60°		D)	45 90°	
			-		

Daily		: Vector		Time : 30 min. Total Marks : 56 Max.					
	hysics	DPP No. 16							
	Type of Questions								
	Single choice Objective ('-1' negative marking) Q	. 1 to Q. 14							
Q 1)	Which pair of the following forces will never give		orce of 2 N						
	A) 2 N and 2 N	В)	1 N and 1 N						
	C) 1 N and 3 N	D)	1 N and 4 N						
Q 2)	Two forces 3N and 2 N are at an angle $\theta$ such that	t the resulta	ant is R. The first force is now i	ncreased to 6N and the					
	resultant become 2R. The value of $\theta$ is A) 30°	B)	60°						
	C) 90°	D)	120°						
Q 3)	Three concurrent forces of the same magnitude a	,		een the forces ? Also name					
~~/	the triangle formed by the forces as sides								
	A) 60° equilateral triangle	B)	120° equilateral triangle						
	C) 120°, 30°, 30° an isosceles triangle	D)	120° an obtuse angled triang	gle					
<b>(</b> 4)	If $ig ec{A}+ec{B}ig =ig ec{A}ig +ig ec{B}ig $ then angle between $ec{A}$ and	$\overrightarrow{B}$ will be							
	A) 90°	B)	120°						
	C) 0°	D)	60°						
Q 5)		kimum and minimum magnitude of the resultant of two given vectors are 17 units and 7 unit respectively. If							
	these two vectors are at right angles to each othe								
	A) 14	B)	16						
	C) 18	D)	13						
6)	The vector sum of two forces is perpendicular to A) Are equal to each other in magnitude	their vector B)	Are not equal to each other						
	<ul><li>A) Are equal to each other in magnitude</li><li>C) Cannot be predicted</li></ul>	D)	Are equal to each other	in magnitude					
Q 7)		ponent of velocity is 20 and x component of velocity is 10. The direction of motion of the body with the							
( )	horizontal at this instant is			the body that the					
	A) $tan^{-1}(2)$	В)	$tan^{-1}(1/2)$						
	C) 45°	D)	0°						
(8)	Two forces of 12 N and 8 N act upon a body. The	resultant fo	rce on the body has maximum	value of					
	A) 4 N	В)	0 N						
	C) 20 N	D)	8 N						
<b>(</b> 9)	Two equal forces (P each) act at a point inclined t			initude of their resultant is					
	A) P/2	B)	P / 4						
10)	C) P The vectors $5\hat{i} + 8\hat{j}$ and $2\hat{i} + 7\hat{j}$ are added. The m	D) Dogoditudo o	2P f the sum of those vector is						
l 10)	A) $\sqrt{274}$	B)	38						
	C) 238	D)	560						
( <b>11</b> )	Two vectors $\vec{A}$ and $\vec{B}$ are such that $\vec{A} + \vec{B} = \vec{A}$ –								
. /	A) $\vec{A} \cdot \vec{B} = 0$	B . men B)	$\vec{A} \times \vec{B} = 0$						
	$ \vec{c} = \vec{c} $	–, D)	$\vec{B} = 0$						
				5					
12)	If a vector $2\hat{i} + 3\hat{i} + 8\hat{k}$ is perpendicular to the v			-					
<b>₹ 12</b> )	If a vector $2\hat{\imath} + 3\hat{j} + 8\hat{k}$ is perpendicular to the v A) $-1$		<u>1</u>						
( 12)	A) – 1	В)	$\frac{1}{2}$						
( 12)	A) $-1$ C) $-\frac{1}{2}$	В) D)	1						
	A) – 1	В) D)	1						
	A) $-1$ C) $-\frac{1}{2}$ If a vector $2\hat{\imath} + 3\hat{j} - \hat{k}$ is perpendicular to the ve A) 0	B) D) ctor -4 <i>î</i> - B)	1 $6\hat{j} - \lambda \hat{k}$ are parallel to each of 2						
Q 13)	A) $-1$ C) $-\frac{1}{2}$ If a vector $2\hat{i} + 3\hat{j} - \hat{k}$ is perpendicular to the ve A) 0 C) 3	B) D) ctor -4 <i>î</i> - B) D)	1 6 $\hat{j} - \lambda \hat{k}$ are parallel to each of 2 4	ther then value of $\lambda$ be					
Q 13)	A) $-1$ C) $-\frac{1}{2}$ If a vector $2\hat{i} + 3\hat{j} - \hat{k}$ is perpendicular to the ve A) 0 C) 3 A particle moves from position $2\hat{i} + 3\hat{j} - 6\hat{k}$ to 1	B) D) ctor -4 <i>î</i> - B) D)	1 6 $\hat{j} - \lambda \hat{k}$ are parallel to each of 2 4	ther then value of $\lambda$ be					
2 13)	A) $-1$ C) $-\frac{1}{2}$ If a vector $2\hat{i} + 3\hat{j} - \hat{k}$ is perpendicular to the vector A) 0 C) 3 A particle moves from position $2\hat{i} + 3\hat{j} - 6\hat{k}$ to 1 displacement in meters then work done will be	B) D) ctor −4î − B) D) L4î + 13 <i>ĵ</i> +	1 6 $\hat{j} - \lambda \hat{k}$ are parallel to each of 2 4 ⊢ 9 $\hat{k}$ due to a uniform force of	ther then value of $\lambda$ be					
Q 12) Q 13) Q 14)	A) $-1$ C) $-\frac{1}{2}$ If a vector $2\hat{i} + 3\hat{j} - \hat{k}$ is perpendicular to the ve A) 0 C) 3 A particle moves from position $2\hat{i} + 3\hat{j} - 6\hat{k}$ to 1	B) D) ctor -4 <i>î</i> - B) D)	1 6 $\hat{j} - \lambda \hat{k}$ are parallel to each of 2 4	ther then value of $\lambda$ be					

Daily Pr	DPP y Practice Topic : roblem	Topic : Mathematical Tools DPP No. 17					
	Type of Questions	ing) 0, 1 to 0, 14					
Q 1)	Single choice Objective ('-1' negative marki						
Q 1)	If for two vector $\vec{A}$ and $\vec{B}$ , sum $(\vec{A} + \vec{B})$ is p A) 1	erpendicular to t B)	A = B. In 2	e ratio of their magnitude is			
	A) 1 C) 3	В) D)	2 None of these				
Q 2)	The angle between the vectors $\vec{A}$ and $\vec{B}$ is 6			ic			
~ =/	A) $A^2B$	B)	Zero	13			
	C) $A^2B\sin\theta$	D)	$A^2B\cos\theta$				
Q 3)	If $\vec{A} \times \vec{B} = \vec{B} \times \vec{A}$ then the angle between A a	•	11 D 000 0				
~ - /	A) $\pi/2$	B)	$\pi/3$				
	C) $\pi$	_, D)	$\pi/4$				
Q 4)	The torque of the force $ec{F} = ig(2 \hat{\imath} - 3 \hat{j} + 4 \widehat{k} ig)$		-	m about the origin be			
-	A) $6\hat{i} - 6\hat{j} + 12\hat{k}$		$\frac{17\hat{\imath}-6\hat{\jmath}-13\hat{k}}{17\hat{\imath}-6\hat{\jmath}-13\hat{k}}$				
	C) $-6\hat{i} + 6\hat{j} - 12\hat{k}$		$-17\hat{\imath} + 6\hat{\jmath} + 13\hat{k}$				
Q 5)	Consider two vectors $\vec{F}_1 = (2\hat{\imath} + 5\hat{k})$ and $\vec{k}$			lar product of these vectors is			
•	A) 20	$\mathbf{H}_{2} = (\mathbf{J}_{1} + \mathbf{H}_{2}).$ B)	23				
	C) $5\sqrt{33}$	D)	26				
Q 6)	If $ \vec{V}1 + \vec{V}2  =  \vec{V}1 - \vec{V}2 $ and V2 is finite,	•					
	A) V1 is parallel to V2	B)	$\vec{V}$ 1 = $\vec{V}$ 2				
	C) V1 and V2 are mutually perpendicula	-	$\left \vec{V}_{1}\right  = \left \vec{V}_{2}\right $				
ד (							
Q 7)	The angle between the vectors $\hat{i} + \hat{j}$ and $\hat{j}$ - A) 30°	+ <i>k</i> is B)	45°				
	C) 60°	D)	45 90°				
<b>2 8)</b>	A particle moves with a velocity $6\hat{\iota} - 4\hat{j} + \hat{\iota}$	•		force $\vec{F} = (2\hat{\imath} - 3\hat{\imath} + 4\hat{k}) N$ The			
<b>~</b> ~,	instantaneous power applied to the particle			once $I = (2t - 3j + 4k) N$ . The			
	A) 35 J/s	B)	45 J/s				
	C) 25 J/s	D)	49 J/s				
Q 9)	If $\vec{P}.\vec{Q} = PQ$ , then angle between $\vec{P}$ and $\vec{Q}$ is	•	200 0/0				
/	A) $0^{\circ}$	в)	30°				
	C) 60°	_, D)	45°				
Q 10)	A force $\vec{F} = \left(5\hat{\imath} + 6\hat{\jmath} + 4\hat{k}\right)N$ acting on a k	odv. produces a	displacement force $\vec{S} = ($	$(6\hat{\iota}-5\widehat{k})N$ . Work done by the			
-	force is	· // [**********************************					
	A) 10 units	В)	18 units				
	C) 11 units	D)	5 units				
Q 11)	The angle between the two vectors $ec{A}=5\hat{\imath}$	+ 5 $\hat{j}$ and $\vec{B} = 5\hat{i}$	$2-5\hat{j}$ will be				
	A) Zero	в)	45 <sup>°</sup>				
	C) 90°	D)	180°				
Q 12)	The vector $\overrightarrow{P}=a\hat{\imath}+a\hat{\jmath}+3\widehat{k}$ and $\overrightarrow{Q}=a\hat{\imath}$ -	– 2 $\hat{j}-\widehat{k}$ are perp	endicular to each other. 1	The positive value of a is			
	A) 3	B)	4				
	C) 9	D)	13				
<b>(</b> 13)	A vector $ec{F}$ 1 is along the positive X-axis. If it	s vector product	with another vector $ec{F}$ 2 is	zero then $\vec{F}$ 2 could be			
(13)	A) 4 <i>ĵ</i>	В)	$3\hat{\imath}+2\hat{j}$				
	$C) \qquad 3\hat{\imath} + 2\hat{\jmath} + 3\hat{k}$	D)	$3\hat{\imath}+2\hat{j}+3\hat{k}$				
			<b>→</b>				
<b>₹ 14</b> )	Let $\vec{A} = \hat{\imath} A \cos \theta + \hat{\jmath} A \sin \theta$ be any vector.	Another vector $\overline{I}$	B which is normal to A is				
Q 14)	-	Another vector <b>B</b>	$\hat{\beta}$ which is normal to A is $\hat{i}Bsin \theta + \hat{j}Bcos \theta$				

Daily Pro	DPP Practice oblem	Topic : I	Mathematical To DPP No. 18	pols	Time : 30 min. Total Marks : 56 Max.
Pl	hysics				
	Type of Q				
		ice Objective ('-1' negative markin		<u>^</u>	
Q 1)		between two vectors $-2\hat{\imath}+3\hat{j}+$	-		
	A) 0°		B)	90°	
	C) 180		D)	None of the above	
Q 2)		$\vec{\mathcal{C}}$ , then which of the following sta		-	
	A) Č⊥		В)	$\vec{C} \perp \vec{B}$	
		$(\vec{\mathbf{A}} + \vec{\mathbf{B}})$	D)	$\vec{\mathbf{C}} \perp (\vec{\mathbf{A}} \times \vec{\mathbf{B}})$	
Q 3)		between two vectors given by $6\hat{i}$	-	- , <b>-</b> .	
	A) <sub>cos</sub>	$-1\left(\frac{1}{\sqrt{3}}\right)$	В)	$\cos^{-1}\left(\frac{5}{\sqrt{3}}\right)$	
	C) sin	$-1\left(\frac{2}{\sqrt{2}}\right)$	D)	$sin^{-1}\left(\frac{\sqrt{5}}{2}\right)$	
<b>0</b> 1)		(\3)		(3)	⇒.
Q 4)		$ec{\mathbf{I}}$ points vertically upward and $ec{\mathbf{B}}$ p		-	XB IS
	A) Zero		B)	Along west	
0.5)	-	ng east	D)	Vertically downward	
Q 5)	•	$d\hat{t} = 4\hat{i} + 5\hat{j}$ and displacement $(\vec{s})$			
	A) 4 ×		B)	5 × 6	
0.6)	C) 6 ×		D)	4 × 6	
Q 6)		$=  \vec{A} \cdot \vec{B} $ , then angle between $\vec{A}$ ar		A = 0	
	A) 30° C) 60°		B) D)	45° 90°	
Q 7)		kwise system	U)	90	
Q7)	A) $\hat{j} \times$		B)	$\hat{\iota}.\hat{\iota}=0$	
	C) $\hat{j} \times$		D)	$\hat{k} \cdot \hat{l} = 0$	
Q 8)		tors $\vec{a}, \vec{b}$ and $\vec{c}$ satisfy the relation		,	alto
~-,	A) $\vec{b}$	tors <i>u</i> , <i>b</i> and <i>c</i> satisfy the relation	и. <i>b</i> = 0 ана и. с В)	$\vec{C}$	
	C) $\vec{b}.\vec{c}$		D)	$\vec{b} \times \vec{c}$	
Q 9)			-		
QJ		orque of a force $\vec{F} = -3\hat{\imath} + \hat{j} + 5\hat{l}$			
		$-38\hat{j}+16\hat{k}$ $+4\hat{j}+4\hat{k}$	B)	$4\hat{\imath} + 4\hat{\jmath} + 6\hat{k}$ $-14\hat{\imath} + 34\hat{\jmath} - 16\hat{k}$	
Q 10)		of $(\vec{A} + \vec{B}) \times (\vec{A} - \vec{B})$ is	0)	-14l + 54j - 10k	
Q 10)	A) 0	of $(A \neq B) \times (A = B)$ is	В)	$A^2 - B^2$	
	C) $\vec{B} \times$	Ă		A = B $2(\vec{B} \times \vec{A})$	
0 1 1 \					î · · · ·
Q 11)		$ec{f B}$ are perpendicular vectors and ve			- <i>ak</i> . The value of a is
	A) -2 C) -7		B)	8	
0 12)	•		D)	-8 0â   10îl	
Q 12)		ctor applied on a mass is represen	lied as $F = 6l -$	$o_J + I U \kappa$ and accelerates	with 1 m/s <sup>-</sup> . What will be
	A) $10_{\rm N}$	of the body in kg. /2	B)	20	
	C) $2\sqrt{10}$		D)	10	
0 12)	• -•-		•		and $2\hat{x} = 2\hat{x} + \hat{y}$ where is the
Q 13)		ent sides of a parallelogram are re	epresented by the	e two vectors $l + 2j + 3k$	and $St = 2j + \kappa$ . What is the
	A) 8	rallelogram	B)	$8\sqrt{3}$	
	A) 8 C) 3√8	5	Б) D)	8√3 192	
0 14)			•		montum avo 2: 12: È Than tha
Q 14)			c and $2i - 3j + l$	c while those of linear mor	mentum are $2\hat{\imath}+3\hat{\jmath}-\widehat{k}.$ Then the
	-	omentum is - 4 <i>ƙ</i>	B)	$4\hat{\iota}-8\hat{k}$	
		$-4\kappa$ $-4\hat{j}+2\hat{k}$	D)	$4i - 8k$ $4\hat{j} - 8\hat{k}$	
	$\sim 2l$	- +j + 2K	נט	тј — ок	

DPP Daily Practice Problem Physics			Time : 30 min. Total Marks : 56 Max.						
	Type of Qu								
Q 1)		ice Objective ('–1' negative m e value of linear velocity, if $\vec{\omega}$			r - 5î	$-6\hat{i}\pm6\hat{k}$			
Q 1)		$-2\hat{j}+3\hat{k}$	- 5	l = 4j + k and	γ — <i>3ι</i> Β)	$6\hat{i}-2\hat{j}+8\hat{k}$			
	C) 4î-	$-13\hat{j}+6\hat{k}$			D)	$-18\hat{\iota}-13\hat{j}+2\hat{k}$			
Q 2)	•	ct of two mutual perpendicul	ar ve	ctor is	-				
	A) 0 C) ∞				B) D)	1 None of these			
Q 3)	•	$\vec{B} = - \vec{A}  \vec{B} $ , then			-,				
		$nd \overrightarrow{B}$ are perpendicular to ea	ich ot	her	B)	$\overrightarrow{A}$ and $\overrightarrow{B}$ act in the same direct	ion		
		$nd \ \overrightarrow{B}$ act in the opposite dire			D)	$\overrightarrow{A}$ and $\overrightarrow{B}$ can act in any direction	on		
Q 4)		$ = 3\vec{A}.\vec{B}$ , then the value of	$\vec{A} + \vec{A}$	₿  is					
	A) $(A^2$	$+B^2+\frac{AB}{\sqrt{3}}\Big)^{1/2}$			В)	A + B			
		$+B^2+\sqrt{3}AB\Big)^{1/2}$			D)	$\left(A^2+B^2+AB\right)^{1/2}$			
Q 5)			article	e causes a displa	cemen	t $\vec{S} = -4\hat{i} + 2\hat{j} - 3\hat{k}$ in its own d	lirection. If the work done is		
		e value of c will be		•		,			
	A) 12				B)	6			
Q 6)	C) 1 A force $\vec{F}$	$-(5\hat{\imath}\pm3\hat{\imath})$ N is applied over		ticle which disp	D) laces it	0 from its original position to the p	point $\vec{s} = (2\hat{\imath} - \hat{\imath}) m$ The work		
~-,		ne particle is	a pai	ticle which disp	laces it	nom its original position to the p	$\int \frac{1}{2t} \int \frac{1}{2t$		
	A) + 11	IJ			B)	+ 7 J			
0.7)	C) + 13		⇒		D)	-7J			
Q 7)	A) A	A is parallel to another vecto	or <i>B</i> th	hen the resultan	t of the B	e vector $\vec{A} \times \vec{B}$ will be equal to $\vec{A}$			
	_	o vector			-, D)	Zero			
Q 8)			f non	collinear forces	, then t	he minimum number of forces ha	as to be		
	A) Fou C) Two				B) D)	Three Five			
Q 9)	,	, in figure the tension in the ho	orizon	tal cord is 30 N.	•		A		
		n in the string OA in Newton					30°		
	A) 30	<u>/</u>	D)				30 N		
		$\sqrt{3}, 30$ $\sqrt{3}, 30$	B) D)	$30\sqrt{3},60$ None of these	2		0		
Q 10)			•			ilibrium. Given P = 1.9318 kg wt,	$\sin\theta_1 =$		
~ -/	0.9659, the value of R is ( in kg wt)								
				_,	-		$\theta_2 \bigvee \theta_1$		
	A) 0.9 C) 1	659		B) D)	<b>2</b> 1				
Q 11)		Itant of a forces of different a	nagni		$\frac{1}{2}$	is zero, then the minimum value	of n is		
Q 11)	A) 1	tant of inforces of unreferrent in	nagin	tudes acting at a	B)	2			
	C) 3				D)	4			
Q 12)		sultant of 2 vectors be zero	. in m	agnituda and di	raction				
	B) No	<ul> <li>A) Yes, when the 2 vectors are same in magnitude and direction</li> <li>B) No</li> </ul>							
		when the 2 vectors are same	e in m	agnitude but op	posite	in sense			
	D) Yes,	when the 2 vectors are same	e in m	agnitude makin	g an an	gle of $\frac{2\pi}{3}$ with each other			
Q 13)		-				he magnitude of their resultant is	12. If the resultant is at 90°		
	with the for A) 12,	orce of smaller magnitude, wl 5	hat ar	e the, magnitud	les of fo B)	orces 14, 4			
	A) 12, C) 5,1				D)	14, 4 10, 8			
Q 14)	• •	of second's hand in watch is	1 cm	. The change in	•	of its tip in 15 seconds is			
	A) Zer				В)	$\frac{\pi}{30\sqrt{2}}$ cm/sec			
	C) $\frac{\pi}{2}c$	m/sec			D)	$\frac{\pi\sqrt{2}}{30}$ cm/sec			

	DPP y Practice		nic · Mathem	atical Tools		
-	roblem	10	opic : Mathema DPP No.			Time : 30 min. Total Marks : 56 Max.
P	hysics		51110.			
	Type of Que	stions				
	Single choic	e Objective ('–1' negative mark				
4)		nd Reason ('-2' negative markin				
1)		$\hat{j}+2\hat{k}$ and $\vec{B}=2\hat{\iota}-2\hat{j}+4\hat{k}$	then value of	-	- / <del>-</del>	
	A) $8\sqrt{2}$			B) D)	$8\sqrt{3}$	
2)	C) $8\sqrt{5}$	vector $ec{F}=4\hat{\iota}-3\hat{j}.$ Another ve	atou that is now	•	$5\sqrt{8}$	
-,	A) $4\hat{i} +$		ctor that is perp	B)	6î	
	C) $7\hat{k}$	-)		D)	$3\hat{i}-4\hat{j}$	
3)	Two vectors	$\vec{A}$ and $\vec{B}$ are at right angles to	each other, whe	n	-	
	A) $\vec{A}$ +	$\vec{B} = 0$		В)	$\overrightarrow{A} - \overrightarrow{B} = 0$	
		$\vec{B} = 0$		D)	$\overrightarrow{A}\cdot\overrightarrow{B}=0$	
4)		oves towards east with velocity	/ 5 m/s. After 10	) seconds its direct	tion changes towards no	rth with same velocity. The
	-	eleration of the particle is		B)	1 , 2	
	A) Zero			B)	$rac{1}{\sqrt{2}}m/s^2$ N $-$ W $rac{1}{\sqrt{2}}m/s^2$ S $-$ W	,
	C) $\frac{1}{\sqrt{2}}m$	$/s^2 N - E$		D)	$\frac{1}{\sqrt{2}}m/s^2 S - W$	
5)	A force $\overline{\vec{F}} =$	$-K(y\hat{\imath} + x\hat{j})$ (where K is a pos	itive constant) a	acts on a particle n	noving in the x-y plane.	Starting from the origin, the
	-	ken along the positive x- axis to	o the point (a, 0	) and then parallel	to the y-axis to the poir	nt (a, a). The total work done
		s $\vec{F}$ on the particle is			2	
	A) $-2K$			B)	2Ka <sup>2</sup> Ka <sup>2</sup>	
6)	C) —Ka	f a boat is 5 km/h in still water.	It crosses a rive	D) er of width 1 km al		e nath in 15 minutes. The
5)	-	he river water is	it ci usses d live	a or width I Kill di	ong the shortest possibl	e path in 13 minutes. Me
	A) 1 km			В)	3 km/h	
	C) 4 km			D)	5 km/h	<i>c</i>
7)		ultant of three vectors $\overrightarrow{OA}$ , $\overrightarrow{OB}$	and $\overrightarrow{OC}$ shown	in the following fi	gure. Radius of the circle	e is $C = B$
	R A) 2D		-1			45°
	A) 2R C) R√2		B) D)	$\frac{R(1+\sqrt{2})}{R(\sqrt{2}-1)}$		$\begin{pmatrix} & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & $
	⊂ <i>j</i> R√2		נט	$\kappa(\sqrt{2}-1)$		
8)	Figure show	s ABCDEF as a regular hexagon	. What is the va	lue of	$E \qquad D$	
	$\overrightarrow{AB} + \overrightarrow{AC} + \overrightarrow{AC}$	$\overrightarrow{AD} + \overrightarrow{AE} + \overrightarrow{AF}$				Λ
	A) $\overrightarrow{AO}$			240	F {	$\rightarrow c$
	C) $4\overrightarrow{AO}$		D)	6 <del>A0</del>	$\langle \rangle \rangle \langle \dot{o} \rangle \rangle$	/
		sertion and reason carefully to				
		ssertion and reason are true a		-		
		issertion and reason are true bi ion is true but reason is false.	ιτ reason is not	tne correct explan	ation of the assertion.	
		ion is true but reason is faise. sertion and reason both are fal	se.			
		ion is false but reason is true.				
9)	Assertion	$\vec{A}  imes \vec{B}$ is perpendicular to				
	Reason	$\vec{A} + \vec{B}$ as well as $\vec{A} - \vec{B}$ lie	in the plane cor	ntaining $\overrightarrow{A}$ and $\overrightarrow{B}$ ,	, but $\overrightarrow{A}  imes \overrightarrow{B}$ lies perpend	icular to the plane containing
		$\vec{A}$ and $\vec{B}$ .				
10)	Assertion	Angle between $\hat{\iota} + \hat{j}$ and $\hat{\iota}$				
	Reason	$\hat{i} + \hat{j}$ is equally inclined to		d the angle betwee	en $\hat{\iota} + \hat{j}$ is 90°	
11)	Assertion	If $\theta$ be the angle between $\vec{A}$	and B , then			
		$\tan\theta = \frac{\vec{A}\times\vec{B}}{\vec{A}\cdot\vec{B}}$				
	Reason	$\vec{A} \times \vec{B}$ is perpendicular to $\vec{A}$	$\overrightarrow{B}$			
12)	Assertion	If $  \vec{A} + \vec{B}  =  \vec{A} - \vec{B} $ , then		$\overrightarrow{A}$ and $\overrightarrow{B}$ is 90°		
	Reason	$\vec{A} + \vec{B} = \vec{B} + \vec{A}$				
13)	Assertion	Vector product of two vector				_
	Reason	If $\vec{v}$ = instantaneous velocity,	$\vec{r}$ = radius vect	or and $\vec{\omega}$ = angular	r velocity, then $\vec{\omega} = \vec{v} \times \vec{v}$	ř.
14)	Assertion Reason	Minimum number of non-eq If $\vec{A} + \vec{B} + \vec{C} = 0$ then they me	ual vectors in a	plane required to		ee.