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Phys 110

First Exam 1437/1438H

عَلَيْ أَنْ الاختِدُ مَكُونَهُ مِن ٣٠ سَوَالْ مُوزِعَةً عِلَى مِفْسَتِينَ وَمِدَة الاختِدَارُ ٩٠ دَقِيقَةً

I	Question	A	В			D		
1	If water of volume 0.03 km <sup>3</sup> covers 37x10 <sup>4</sup> m <sup>2</sup> of flat land, find the depth of the water. (Volume = Area X Depth)	81.08 m	79.78 m	83.3	8 m	77.88	8 m	
2	The initial and the final positions of a particle moving along x-axis are $X_1 = -76$ m, $X_2 = 83$ m, then its displacement $\Delta x$ equals:	+159 m	+7 m	-15			8 m	
3	A car has a speed of 72 Km/min Convert this speed to m/s	1.2 x 10 <sup>3</sup> m/s	4.2 x 10 3 m/s	3.2 x	x 10 3 m/s 5.2 x		10 3 m/s	
4	The result of (î x ĵ) x î is	1	k		Lero	-	1	
5	Convert 53.6 min to seconds	4.216 x 10 3 s	5.216 x 10 3 s	0.21	6 x 10 3 s	3.216	x 10 3 s	
6	A soccer ball is kicked horizontally. If its displacement after 5 s is 19 m, then its average speed is	6.1 m/s	1 m/s	3	.8 m/s	2.	5 m/s	
7	Vector A has a magnitude of 19.0 m and is directed 30.0° northwest, vector B has a magnitude of 4.0 m and is directed east. The magnitude of A + B is:	17.664	15.664		19.664		14.664	
8	The SI base unit for mass is	kilogram	ounce		pound		gram	
9	For the two vectors $A = 2i - 2j + 2k$ and $B = -2i - 1j + 1k$ . The product of A.B gives:	-3.0	1.0		4.0		0.0	
10	1 m is equivalent to 3.281 ft. A cube with an edge of 1.5 ft has a volume of	9.6 X 10 <sup>2</sup> m <sup>-3</sup>	1.2 X 10 <sup>2</sup> m <sup>3</sup>	9.	9.6 X 10 <sup>-2</sup> m <sup>-3</sup>		10.5 m³	
11	Which of the following quantities is a vector quantity?	speed	acceleration	1	distance		above	
12	A car moves along a straight line with velocity $v = t^2 - 26.0$ m/s , The acceleration at $t = 13.0$ s is:	23.0 m/s <sup>2</sup>	28.0 m/s <sup>2</sup>		26.0 m/s <sup>2</sup>		30.0 m/s <sup>2</sup>	
12	The result of 2j. (kxî) is	23	-2		2	_	Zero	
4	If A and B are vectors with the magnitude 5 and 4 respectively and their dot product is 17.5, then the angle between A and B is:	20 055 0	31.955°		32.955 °		26.955°	
d	The density of solid is 6.0 g/cm <sup>3</sup> . The value in kilograms per cubic meter is:	6.0E-4 kg/	m <sup>3</sup> 0.006 kg/1	m³	600.0 kg/m <sup>3</sup>		6000.0 kg/m	
6	The result of (j x k) x (k x i) is	î	ĵ		0		k	
7	Two vectors are given $A = 3\hat{\imath} - 3\hat{\jmath} + 5\hat{k}$ and $B = 4\hat{\imath} + 3\hat{\jmath} + 2\hat{k}$ . The results of $2\hat{A} + \hat{B}$ is:	12î - ĵ + 1-	4 k 141 - 7j +		î k   10î - 3ĵ + 12 li		9î - 4ĵ + 13	
- 1	1 mi is equivalent to 1609 m so 55 mph	is 25 m/s	18 m/	5	15 m/s		55 m/s	

King Abdulaziz University Faculty of Sciences



Phys 110

First Exam 1437/1438H

على إلى الاعتبار مكونة من ٢٠ سؤال موزعة على صفحون ومدة الاعتبار ١٠ دفيقة

		STREET,	- 1			C	D	
D	Question	A		V. 1	1	10-4m <sup>2</sup>	102	us.
	A square with an edge of exactly 1 cm	10 <sup>-6</sup> m <sup>2</sup>	10	²m²		BOA:	Twon	nonths
12.5	has an arca of	One year	Ten	days	(	one day	*****	
e	Six million seconds is approximately	Out 1		1.1		1		1
N	A stone is released from rest the edge of a building roof 190 m above the ground. Neglecting air resistance, the speed of the stone, just before striking	120 m/s	19	0 m/s		43 m/s	4	m/s
	he ground, is A 0.57 kg solid sphere has a radius 27	6.21 X	10	6.91 X 10 <sup>3</sup> kg/m <sup>3</sup> 5.67		1 X 10 <sup>3</sup> kg/m <sup>3</sup>	10	kg/m³
22		103 kg/m3			mass, weight,		ma	ss, length,
	(Volume of a Sphere	length,		weight,		time	1	time
**	The SI base units have the dimensions of	density, tim	ie ler	igth, time	+	32,000		
2.5	L have magnitude L.	3			1	2L2	1	1,3/2
	Vectors A and B each have magnitude L. When drawn with their tails at the same When drawn with their tails at the same	L2	3 1	L	V	247	1	
24	When drawn with the	e	1	1			-	
			1	1		-3.008 m/s		-1.008 m/s <sup>2</sup>
-		0.992 m	0.992 m/s <sup>2</sup> -2.00		-2,008 m/s <sup>2</sup>			
24					- 11	the accelera	rion	the speed of
-	car in 60.0 m, The acceleration is:		the body falls  9.8 m during		alls	of the boo		the body
-		the body			ing	increases by	y 9.8 increases by	
	A freely falling body has a consta	nt o g m du			irst m/s2 durin		each	9.8 m/2 during each second
2	A freely falling body has a acceleration of 9.8 m/s2. This means the	each second		second		second		each second
1					13.29		6	11.296
L	If $A = 3\hat{i} + 9\hat{j} + 4\hat{k}$ , then the magnitude	10.25	96	8.29	6	1,5.47	501I	
2								1
-	01 /x 157	ard						1
2	with an initial velocit another object with an initial velocit 10 m/s. The maximum height reached the first object will be that of	y of d by f the	imes	100 ti	imes	10 tis	nes	10,000 times
1	other.	wn a				1 200	4490925	5 m/s
-	A car starts from rest and goes dor slope with a constant acceleration m/s². After 5 seconds, the car reache bottom of the hill. What is its speed is bottom of the hill?	nes the		2.5 m/s		10	10 m/s	
1		y x =					ne	2.85 m
-	413 - 20 + 1.51, 11.00	ne position of an object is given by a second of a sec		5	5.25 m/s		.75 m/	



First Exam 1437/1438H

علم إلى الاعبار مكونة من ٣٠ سؤال موزعة على صفحين ومنة الاعبار ٩٠ دقيقة

1	ID Question	A	В	C	D
The state of the s	A car moves along a straight line with velocity $v = t^2 - 13.0 \text{ m/s}$ , The acceleration at $t = 6.0 \text{ s}$ is:	9.0 m/s <sup>2</sup>	13.0 m/s²	12.0 m/s <sup>2</sup>	16.0 m/s <sup>2</sup>
Total Land	The density of liquid is 2.5 g/cm³. This value in kilograms per cubic meter is:	3.0E-4 kg/m <sup>3</sup>	2500.0 kg/m <sup>3</sup>	250.0 kg/m <sup>3</sup>	0.0025 kg/m³
1	A freely falling body has a constant acceleration of 9.8 m/s². This means that	the body falls 9.8 m during the first second	the body falls 9.8 m during each second	body increases	the acceleration of the body increases by 9.8 m/s <sup>2</sup> during each second
1	If water of volume 0.04 km³ covers 59x10 <sup>4</sup> m² of flat land, find the depth of the water. (Volume = Area X Depth)	64.6 m	65.4 m	69.2 m	67.8 m
21	A car moves with velocity of 18.0 m/s, then the driver used the break to stop the car in 163.0 m, The acceleration is:	3.006 m/s <sup>2</sup>	-0.994 m/s <sup>2</sup>	1.006 m/s <sup>2</sup>	2.006 m/s <sup>2</sup>
2	The SI base unit for mass is	gram	kilogram	ounce	pound
23	The result of (j x k ) x j is	k	î	Zero	j
23	1 mi is equivalent to 1609 m so 55 mph is	25 m/s	18 m/s	15 m/s	55 m/s
24	A soccer ball is kicked horizontally. If its displacement after 2 s is 19 m, then its average speed is	12.4 m/s	8.2 m/s	9.5 m/s	11.8 m/s
25	Two vectors are given $A = 3i - 3j + 5k$ and $B = -4i + 3j - 2k$ . The results of $2\tilde{A} + \tilde{B}$ is:	4î - 5ĵ + 6 k	51 - 6j + 5 k	6î - 7j + 4 k	21 - 3j + 8 k
6	A car has a speed of 97 Km/min Convert this speed to m/s	5.617 x 10 <sup>3</sup> m/s	1.617.x 10 <sup>1</sup> m/s	3.617 x 10 <sup>1</sup> m	/s 0.617 x 10 <sup>3</sup> m/
7	For the two vectors $A = 2\hat{i} + 2\hat{j} - 2\hat{k}$ and $B = -2\hat{i} + 1\hat{j} + 1\hat{k}$ . The product of A.B gives:	-1.0	-3.0	-6.0	-4.0
8	A stone is released from rest from the edge of a building roof 190 m above the ground. Neglecting air resistance, the speed of the stone, just before striking the ground, is	190 m/s	120 m/s	61 m/s	43 m/s
,	Vectors A and B each have magnitude L. When drawn with their tails at the same point, the angle between them is 30°. The magnitude of A X B is:	Ĺ	2L <sup>2</sup>	L <sup>2</sup>	L <sup>2</sup> /2
	A square with an edge of exactly 1 cm has in area of	10 <sup>-6</sup> m <sup>2</sup>	10 <sup>2</sup> m <sup>2</sup>	10 <sup>-4</sup> m <sup>2</sup>	10 <sup>-2</sup> m <sup>2</sup>

علاً إلى الاختيار مكونة من ٣٠ سؤال موزعة على صفحين ومدة الاختيار ٩٠ دقيقة

	. (8	ID Question	A	В	C	D
		A stone is released from rest from the edge of a building roof 190 m above the ground. Neglecting air resistance, the speed of the stone, just before striking the ground, is	120 m/s	190 m/s	43 m/s	61 m/s
	2	The result of (j x k) x (k x i) is	î	0	î	k
	3	For the two vectors $A = 2\hat{\imath} + 2\hat{\jmath} + 2\hat{k}$ and $B = -2\hat{\imath} - 2\hat{\jmath} + 1\hat{k}$ . The product of A.B gives:	-6.0	-5.0	-2.0	-9.0
	4	The result of (î x ĵ) x î is	î	Zero	ĵ	k
	5	Convert 93.8 min to seconds	1.628 x 10 <sup>3</sup> s	5.628 x 10 <sup>3</sup> s	8.628 x 10 <sup>3</sup> s	6.628 x 10 <sup>-3</sup> s
	6	A square with an edge of exactly 1 cm has an area of	10 <sup>-4</sup> m <sup>2</sup>	10 <sup>2</sup> m <sup>2</sup>	10 <sup>-6</sup> m <sup>2</sup>	10 <sup>-2</sup> m <sup>2</sup>
į	7	Which of the following quantities is a vector quantity?	distance	speed	acceleration	a and b
	8	Vector A has a magnitude of 9.0 m and is directed 40.0° northwest. Vector B has a magnitude of 2.0 m and is directed east. The magnitude of A + B is:	11.578	7.578	10.578	6.578
5	)	The SI base units have the dimensions of	mass, length, time	mass, weight,	length, density, time	weight, length, time
	0	One object is thrown vertically npward with an initial velocity of 100 m/s and another object with an initial velocity of 10 m/s. The maximum height reached by the first object will be that of the other.	10,000 times	10 times	100 times	1000 times
11		A freely falling body has a constant acceleration of 9.8 m/s². This means that	the speed of the body increases by 9.8 m/2 during each second	the body falls 9.8 m during the first second	the acceleration of the body increases by 9.8 m/s <sup>2</sup> during each second	the body falls 9.8 m during each second
100	P	vectors A and B each have magnitude L. When drawn with their tails at the same oint, the angle between them is 30°. The agnitude of A X B is:	L	2L²	L	1,2/2
	TI	he result of 6ĵ . (k x î ) is	6ĵ	Zero	6	-6
Ì	Th	ne SI base unit for mass is	pound	gram	kilogram	ounce
Time and a second	A	car starts from rest and goes down a slope th a constant acceleration of 5 m/s². After 5	2.5 m/s	25 m/s	5 m/s	10 m

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Phys 110



First Exam

علمًا بأن الاختبار مكونة من ٣٠ سؤال موزعة على صفحتين ومدة الاختبار ٩٠ دقيقة

П	Question	A	В	С	D
	seconds, the car reaches the bottom of the hill What is its speed at the bottom of the hill?	L			
16	A car moves with velocity of 29.0 m/s, then the driver used the break to stop the car in 194.0 m, The acceleration is:	e 0 -0.168 m/s <sup>2</sup>	-1.168 m/s <sup>2</sup>	-2.168 m/s <sup>2</sup>	1.832 m/s <sup>2</sup>
17	1 mi is equivalent to 1609 m so 55 mph is	55 m/s	125 m/s	25 m/s	81 m/s
18	1 m is equivalent to 3.281 ft. A cube with ar edge of 1.5 ft has a volume of	10.5 m <sup>3</sup>	1.2 X 10 <sup>2</sup> m <sup>3</sup>	9.6 X 10 <sup>2</sup> m <sup>-3</sup>	9.6 X 10 <sup>-2</sup> m <sup>-3</sup>
1	The position of an object is given by $x = 4t^3$ . $2t^2 + 2.5t$ , where x and t are in SI units. What is the instantaneous velocity of the object when $t = 0.25$ s.		5.45 m/s	2.25 m/s	4.55 m/s
	If $A = 7\hat{\imath} + 9\hat{\jmath} + 19\hat{k}$ , then the magnitude of A is:	20.159	25.159	22.159	23.159
21	Six million seconds is approximately	One year	Two months	One day	Ten days
22	A car moves along a straight line with velocity $y = t^2 - 17.0 \text{ m/s}$ , The acceleration at $t = 12.0 \text{ is}$ :	24.0 m/s <sup>2</sup>	27.0 m/s <sup>2</sup>	23.0 m/s <sup>2</sup>	26.0 m/s <sup>2</sup>
3 A	0.28 kg solid sphere has a radius 32 mm. its ensity is: (Volume of a Sphere = $4/3\pi r^3$ )	1.34 X 10 <sup>3</sup> kg/m <sup>3</sup>	4.14 X 10 <sup>3</sup> kg/m <sup>3</sup>	2.04 X 10 <sup>3</sup> kg/m <sup>3</sup>	0.74 X 10 <sup>3</sup> kg/m <sup>3</sup>
4 ai	A and B are vectors with the magnitude 4 and 6 respectively and their dot product is 2.5, then the angle between A and B is:	57.612 °	62.612°	58.612 °	61.612°
di	soccer ball is kicked horizontally. If its splacement after 5 s is 22 m, then its erage speed is	6.7 m/s	7.3 m/s	4.4 m/s	3.1 m/s
mo	the initial and the final positions of a particle oving along x-axis are $X_1 = -73$ m, $X_2 = 97$ then its displacement $\Delta x$ equals:	+24 m	-170 m	+170 m	-340 m
	e density of liquid is 5.4 g/cm³. This value kilograms per cubic meter is:	540.0 kg/m <sup>3</sup>	5400.0 kg/m <sup>3</sup>	0.0054 kg/m <sup>3</sup>	5.0E-4 kg/m <sup>3</sup>
45x	water of volume 0.02 km <sup>3</sup> covers 10 <sup>4</sup> m <sup>2</sup> of flat land, find the depth of the er. (Volume = Area X Depth)	46.74 m	47.54 m	44.44 m	43.14 m
	vectors are given $A = 3\hat{i} + 2\hat{j} + 5\hat{k}$ and $B = 3\hat{j} + 2\hat{k}$ . The results of $2\bar{A} - \bar{B}$ is:	3î + 9ĵ + 6 k	4î + 4ĵ + 11 k	2î + 8ĵ + 9 k	î + 7ĵ +
	r has a speed of 45 Km/min Convert this d to m/s	11.5 x	8.5 x 10 2 m/s	4.5 x 10 <sup>2</sup> m/s	7.5 x 10 <sup>2</sup> m/



## King Abdulaziz University Faculty of Sciences



Phys 110

First Exam 1437/1438H

## علماً بأن الاعتبار مكونة من ٣٠ سوال موزعة على صفحتين ومدة الاعتبار ٩٠ دقيقة

F	One object is thrown vertically upward with an initial velocity of 100 m/s and another object with an initial velocity of 10 m/s. The maximum height reached by the first object will be that of the other.	100 times	10 times	10,000 times	1000 times
18	The result of († x.j.) x l is	Zero	1	lk .	1
19	Vector A has a magnitude of 6.0 m and is	14.213	10.213	13.213	11.213
20	The result of (j x k) x (k x l) is	j	jî .	jk .	0
21	A car moves along a straight line with velocity v = t <sup>2</sup> - 10.0 m/s, The acceleration at t = 19.0 s is:	38.0 m/s <sup>2</sup>	40.0 m/s <sup>2</sup>	34.0 m/s <sup>2</sup>	39.0 m/s <sup>2</sup>
22	For the two vectors $\mathbf{A} = 2\mathbf{i} + 2\mathbf{j} + 2\mathbf{k}$ and $\mathbf{B} = -2\mathbf{i} + 1\mathbf{j} - 1\mathbf{k}$ . The product of A.B gives:	-4.0	-1.0	-8.0	-3.0
23	1 mi is equivalent to 1609 m so 55 mph is	81 m/s	25 m/s	15 m/s	125 m/s
		ounce	pound	gram	kilogram
25	A stone is released from rest from the edge of a building roof 190 m above the ground. Neglecting air resistance, the speed of the stone, just before striking the ground, is	61 m/s	43 m/s	190 m/s	120 m/s
6 1	A car starts from rest and goes down a slope with a constant acceleration of 5 m/s <sup>2</sup> . After 5 seconds, the car reaches the sottom of the hill. What is its speed at the sottom of the hill?	10 m/s	5 m/s	25 m/s	2.5 m/s
111106.0	ix million seconds is approximately	Ten days	One day	Two mon	ths One year
8 4	f water of volume 0.01 km <sup>3</sup> covers $3x10^4$ m <sup>2</sup> of flat land, find the depth of the water. (Volume = Area X Depth)	23.26 m	20.06 m	20.86 m	24.66 m
4t ur W	the position of an object is given by $x = 3 - 2t^2 + 2.5t$ , where x and t are in SI nits.  That is the instantaneous velocity of the object when $t = 0.75$ s.	7.75 m/s	9.45 m/s	3.85 m/s	6.25 m/s
A	square with an edge of exactly 1 cm has area of	10 <sup>2</sup> m <sup>2</sup>	10 <sup>4</sup> m <sup>2</sup>	10 <sup>-2</sup> m <sup>2</sup>	10 <sup>4</sup> m <sup>2</sup>

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First Exam 1437/1438H

علماً بأن الاختبار مكونة من ٣٠ سوال موزعة على صفحتين ومدة الاختبار ٩٠ دقيقة

	ID Question	A	B	C	D
	A stone is released from rest from the edge of a building roof 190 m above the ground. Neglecting air resistance, the speed of the stone, just before striking the ground, is	120 m/s	190 m/s	43 m/s	61 m/s
	2 The result of (j x k) x (k x i) is	î	0	ĵ	k
	For the two vectors $A = 2\hat{i} + 2\hat{j} + 2\hat{k}$ and $B = -2\hat{i} - 2\hat{j} + 1\hat{k}$ . The product of A.B gives:	-6.0	-5.0	-2.0	-9.0
100	The result of (î x ĵ) x î is	î	Zero	ĵ	k
1	Convert 93.8 min to seconds	1.628 x 10 3 s	5.628 x 10 <sup>3</sup> s	8.628 x 10 <sup>3</sup> s	6.628 x 10 <sup>3</sup> s
	A square with an edge of exactly 1 cm has an area of	10 <sup>-4</sup> m <sup>2</sup>	10 <sup>2</sup> m <sup>2</sup>	10 <sup>-6</sup> m <sup>2</sup>	10 <sup>-2</sup> m <sup>2</sup>
7	Which of the following quantities is a vector quantity?	distance	speed	acceleration	a and b
8	Vector A has a magnitude of 9.0 m and is directed 40.0° northwest. Vector B has a magnitude of 2.0 m and is directed east. The magnitude of A + B is:	11.578	7.578	10.578	6.578
)	The SI base units have the dimensions of	mass, length, time	mass, weight, time	length, density, time	weight, length, time
0	One object is thrown vertically upward with an initial velocity of 100 m/s and another object with an initial velocity of 10 m/s. The maximum height reached by the first object will be that of the other.	10,000 times	10 times	100 times	1000 times
The state of the s	A freely falling body has a constant acceleration of 9.8 m/s <sup>2</sup> . This means that	the speed of the body increases by 9.8 m/² during each second	the body falls 9.8 m during the first second	the acceleration of the body increases by 9.8 m/s² during each second	the body falls 9.8 m during each second
1	Vectors A and B each have magnitude L. When drawn with their tails at the same point, the angle between them is 30°. The magnitude of A X B is:	L	2L2	L <sup>2</sup>	L2/2
1	The result of 6j. (kxi) is	6ĵ	Zero	6	-6
1	he SI base unit for mass is	pound	gram	kilogram	ounce
Aw	car starts from rest and goes down a slope ith a constant acceleration of 5 m/s <sup>2</sup> . After 5	2.5 m/s	25 m/s	5 m/s	10 m



