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1411	Jordan university of science & Tech. Pays (101) Fall 98/99
1	Department of Physics B Final Exam.
	Q1: An object has a velocity of (4 ur/s) when it starts as desclorate (644) according to $x = -d/2$ ,
	where a is measured in $m/s^2$ , and s in seconds. What is the time it takes the object to stop? a) 8 sec b) 5.7 sec c) 2.8 sec d) 4 sec
	Q2: A stone is released from a balloon which is descending $(h_{rel})$ at constant speed of $10 \text{ m/s}$ .
	After (10 sec) the speed of the stone in m/s is.       a) 110     b) 200     c) 190     d) 210
	Q3: What is the angle between the two vectors $A = 2i+2j+k$ , $B = 3i+4k$ a) 43° b) 86° c) 48° d) 35°
	Q4: A stone is thrown horizontally from the top of a (20 m) high building. (ببطنا) the ground at an angle of (45°).
V	With what speed was it thrown. (a) 20 m/s (b) 40 m/s (c) 5 m/s (d) 10 m/s
	Q5: A 1000 kg elevator accelerates downward at (3 m/s2). The force exerted by the cable on 6
	the clevator in KN is. a) 4.9 b) 9.1 (* c) 7 d) 2.1
•	Q6: Two blocks (m <sub>1</sub> =-ikg), (m <sub>2</sub> =20 kg) are pushed along a horizontal frictionless surface by a force of (72N) as shown, what is the force that m <sub>1</sub> excision m <sub>2</sub> .
	a) 30 N b) 36 N c) zero d) 60 N
	a horizontal frictionless table. The object completes (116.3 ) revolutions every minute. If the radius of the circle is (0.6 m). What is the tension in the string. a) 17.8 N b) 7.4 N c; 0.75 N d) 29.6 N
	Q8: A bail of mass m is suspended at the end of a massless cord of length L as
	shown. The ball is drawn horizontally aside and then released What is the tension in the cord at the lowest point of its swing?
	a) 6mg b) 2mg c) 3 mg d) mg
V	Q9: At the same instant that a ball of mass m1= 0.5 kg is dropped from (م) المعني a very high altitude (در المعني), another ball of mass m2= 0.25 kg is thrown
	vertically up from the surface of the ground with velocity of 15 m/s .
	What is the velocity of the center of mass of the two balls after three seconds.
	a) 15 m/s down b) 25 m/s down c) 30 m/s up d) 20 m/s up
	mass moving in the opposite direction with (-25 $m/s$ ) velocity. The velocities of the 2 kg and the 4 kg masses in m/s immediately after the collision respectively are : a) (-75,150) b) (-150,75) $\sim$ c) (50,-25) d) (-50,25)
	Q11: A wheel starts from rest and rotates about a fixed axis with constant angular
	acceleration of (4 rad/s <sup>2</sup> ). What time it takes to complete 20 revolutions,
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	acceleration of (4 rad/s <sup>2</sup> ). What time it takes to complete 20 revolutions.   (a) 5.6 sec (b) 3.2 sec   (c) 4.0 sec (c) 4.0 sec   (c) 4.0 sec (c) 7.9 sec
	acceleration of (4 rad/s <sup>2</sup> ). What time it takes to complete 20 revolutions.     (a) 5.6 sec   (b) 3.2 sec   (c) 4.0 sec   (d) 7.9 sec     Q12: A tennis ball of mass m rebounds from a racket with the same speed it had initially as shown. What is the magnitude of the impulse delivered to the ball?   Name 1

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	Q14:A man of (30 kg) mass runs at a speed of (2.2 m/s) along the tangent to a (160 kg) disk (Ic=MR <sup>2</sup> /2, redrus R=1m), the disk is initially at rest but can rotate freely about its center. Find the angular speed of the disk after the man jumps on the disk. a) 1 rad/s b) 0.7 rad/s b) 0.7 rad/s b) 0.5 red/a															fore	2				
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	Q15:	A 20 kg child stands at the center of a disk, which has a 3m radius and a 600 kg m <sup>2</sup> moment of inertia, and rotates with an angular speed of 2.1 rad/s. Find the angular speed of the disk as the child welks from the center to the rim (ilu-) of the disk.																			
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