Exam 1 CH	APTERS 1-3	
Name		
MULTIPLE CHOICE. Choose the one alternative that best	completes the statement or answers the questi	ion.
This is a 40 question multiple choice test. The correctly answered bonus question will replaincorrectly (if any). Your max score is 40 points	ce one of the 40 questions answered	
1) Eratosthenes' measurements of Earth's size involve	ed	1)
A) a deep well in Syene.		
B) a pillar's shadow in Alexandria.C) surveying the distance between Alexandria	and Svono	
D) all of the above	and Syene.	
2) Spots of sunlight on the ground cast through open		2)
A) images of the Sun.	B) part of a solar eclipse.	
C) due to refraction of sunlight.	D) all of the above	
A simple method of measuring the distance betwe line of sight to the Moon a	en the Earth and the Moon is to place in your	3)
A) magnifying glass.	B) telescope.	
C) meterstick.	D) coin.	
4) A theory in the field of science is		4)
A) an educated guess.		
B) less than a fact.		
C) a synthesis of a large body of well-tested knD) unchangeable.	owledge.	
5) An educated scientific guess is a		5)
A) hypothesis.	B) theory.	, <u> </u>
C) either of these	D) neither of these	
6) For a scientific hypothesis to be valid, there must b	e a test for proving it	6)
A) right.		
B) wrong.		
C) conclusively one way or the other.		
7) Which of the following is a scientific statement?		7)
A) candy Bon Bons contain no sugarB) there are things we will never know about		
C) matter is filled with undetectable particles		
D) there are parts of the universe that will neve	r be discovered by humans	
E) none of the above		

B) property of matter.
D) none of the above

8) _____

8) Inertia is defined as a

C) change in motion.

A) force.

9) If no external forces act on a moving object, it wil	\coprod	9)
A) continue moving at the same speed.		
B) move slower and slower until it finally sto	DS.	
C) come to an abrupt halt.	1	
D) none of the above		
D) note of the above		
10) 141	11	10)
10) When no forces act on moving objects their paths	•	10)
A) straight lines.	B) circles.	
C) ellipses.	D) all of the above	
11) Whirl a rock at the end of a string and it follows a	a circular path. If the string breaks, the tendency	11)
of the rock is to	8	,
A) follow a circular path.	B) slow down.	
C) follow a straight-line path.	D) stop.	
c) follow a straight-line path.	<i>D)</i> stop.	
12) Which concept is being illustrated when a tablect	loth is quickly vanked beneath dishes resting on	12)
a table?	tour is quietaly furnical perioduri distress resuiting of	
A) equilibrium B) friction	C) support force D) inertia	
71) equilibrium b) metion	c) support force	
12) When a realist ship asining anord in outer anges	muna out of first it	13)
13) When a rocket ship gaining speed in outer spaceA) gains speed for a short time, then slows do		13)
	, and the second	
B) gains speed for a short time, slows down, a	and eventually stops.	
C) no longer gains speed.		
14) When you quickly jerk a cart forward that has a l	oall resting in the middle, the	14)
A) front of the cart hits the ball.		
B) back of the cart hits the ball.		
C) neither, for the ball rides along in the midd	lle as the cart moves forward.	
D) All of the above depending on how quickly	y the cart is pulled.	
	-	
15) A force is a vector quantity because it has both		15)
A) magnitude and direction.	B) mass and velocity.	
C) action and reaction counterparts.	D) speed and direction.	
C) action and reaction counterparts.	D) speed and direction.	
46) 4		1.6)
16) A tree stump is pulled northward by a 10-N force		16)
southward. The resultant force has a magnitude		
A) 0 N. B) 15 N.	C) 25 N. D) 150 N.	
17) If Nellie hangs from a horizontal bar that is supp	orted by four vertical ropes, the tension in the	17)
ropes		
A) are each half her weight.	B) are each equal to her weight.	
C) add to equal her weight.	D) none of the above	
18) Nellie hangs from a pair of ropes at an angle. Ter	nsion in the ropes depends on the	18)
A) length of the ropes.	B) angle of the ropes.	
C) both of these	D) neither of these	

19) Su	ıspend your body from a	pair of ropes slight	ly angled from the ve	ertical and the tension in each	19)
ro	pe will be				
	A) equal your weight.		B) half your	weight.	
	C) greater than half you	ır weight.	D) none of th		
20) Th	ne equilibrium rule, $\Sigma F =$	0, applies to			20)
	A) objects or systems at	rest.			
	B) objects or systems in	uniform motion in	a straight line.		
	C) both of these				
	D) neither of these				
		.1			
				weights plus the weight of	21)
m	e scaffold, the sum of ten	B) the same.	~ .	D) zoro	
	A) less.	b) the same.	C) greater.	D) zero.	
22) D.	unl and Davil barra a total	uroicht of 1200 NL TI	no tonoiono in the ou	anouting range that support	22)
	eir scaffold add to 1700 N	_		pporting ropes that support	22)
ur	A) 300 N.	B) 400 N.	C) 500 N.	D) 600 N.	
	11) 500 IV.	D) 400 IV.	C) 300 IV.	<i>D)</i> 000 14.	
23) Th	ne support force on a 10-1	N hook at rost on a t	ahlo is		23)
23) 11	A) slightly less than 10		B) 10 N.		
	C) slightly greater than			t on the position of the book.	
	e, ongrui, greuter utari	10111	2) dependen	on the position of the soon.	
24) A	gymnast performing son	nersaults in a high-	lying plane moving	at constant velocity needs to	24)
	ake	nersuarts in a mgm	a) mg piane moving	at constant velocity needs to	
	A) small adjustments to	compensate for the	airplane's velocity.		
	B) major adjustments to		•		
	C) no adjustments.	1	1		
	D) none of the above				
25) A	mosquito flying at 3 m/s	s that encounters a b	reeze blowing at 3 n	n/s in the same direction has	25)
a s	speed of				
	A) 0 m/s .	B) 3 m/s .	C) 4 m/s .	D) 6 m/s.	
26) Jo	gging Jake runs at $4\mathrm{m/s}$	along a train flatcar	that moves at 10 m	s in the same direction. Jake's	26)
sp	eed relative to the groun	d is			
	A) 6 m/s .		B) 10 m/s .		
	C) 14 m/s .		D) none of th	e above	
27) Th	ne speedometer of an aut				27)
	A) average speed.	B) instant	taneous speed.	C) accelerated speed.	
	a ==	,			-0)
28) W	hen you walk at an avera	~ .	•		28)
	A) 2 m.	B) 10 m.	C) 15 m.	D) 20 m.	
20) 1	1.1 1 .	1			20)
29) A	vehicle undergoes accele	eration when it	D) 1	1	29)
	A) gains speed.		B) loses spee		
	C) changes its direction		D) all of the a	idove	

30) The average speed of	of a horse that gallops	10 kilometers in 30 minutes is		30)
A) 15 km/h.	B) 20 km/h.	C) 30 km/h.	D) 40 km/h.	
31) While a car travels a	around a circular track	at a constant speed, its		31)
A) acceleration is	s zero.	B) velocity is zero	•	
C) inertia is zero		D) none of the abo	ove	
32) If a car increases its	velocity from zero to	60 m/s in 10 seconds, its accel	eration is	32)
A) 3 m/s^2 .	B) 6 m/s^2 .	C) 60 m/s^2 .	D) 60 m/s.	
33) A cart changes its spacceleration is	peed from 90 m/s to 1	00 m/s in 10 seconds. During	this interval its	33)
A) zero.		B) 1 m/ s^2 .		
C) 10 m/s^2 .		D) none of the abo	ove	
34) A ball tossed vertica	ally upward rises, reac	hes its highest point, and then	falls back to its starting	34)
point. During this ti A) in the direction	me the acceleration of	the ball is always		
B) opposite its v				
C) directed upw				
D) directed down				
E) none of the ab	oove			
35) What is the accelera m/s?	tion of a car that starts	s from rest and 5 seconds later	reaches a speed of 20	35)
A) 1 m/s^2	B) 2 m/s^2	C) 3 m/s^2 D) 4 m/s^2	E) 5 m/s ²	
• • •		th a speedometer, its speed rea	nding would increase	36)
each second by abou $A) 5 \text{ m/s}.$	ut			
B) 10 m/s.				
C) 15 m/s.				
D) a variable am E) depends on it				
L) depends on it	s initial speed			
	r starting from rest, a	freely-falling cantelope has a	speed of	37)
A) 10 m/s. C) 100 m/s.		B) 50 m/s. D) more than 100	m/e	
C) 100 III, 3.		D) more than 100	1117 3.	
,	-	quipped with an odometer to		38)
A) constant.	ount of distance it tra	vels each succeeding second w B) less and less ea		
•	he second before.	D) doubled.	en secona.	
20) A hall is through	wards and returns to t	ha cama location. Compared .	with its initial speed its	39)
speed when it return		he same location. Compared v	viui us mutai speed us	
A) half as much.		B) the same.		
C) twice as much	າ.	D) four times as m	nuch.	

40) At one instant a heavy of approximately	bject in air is moving	upward at 50 m/s. One se	econd later its speed is	40) _
A) 40 m/s .	B) 50 m/s.	C) 55 m/s .	D) 60 m/s.	
following questions a	re bonus questio	ans If you answer:	tham carrectly that	v will
ace a missed question	-	ons. II you answer	mem correctly the	y WIII
41) If an object moves with constant acceleration, its velocity must A) be constant also.		41)		
B) change by the san	ne amount each secon	d.		
C) change by varying D) always decrease.	g amounts depending	on its speed.		
42) Nellie pulls with a force rope is	of 50 N on a horizont	al rope tied to a tree at res	st. The net force on the	42) _
A) 50 N and rope ten	sion is 0 N.	B) 50 N and rope	tension is also 50 N.	
C) zero and rope ten	sion is 50 N.	D) zero and rope	tension is also zero.	
43) A package falls off a true speed of the package jus	0	0 0	stance, the <mark>horizontal</mark>	43) _
A) less than 30 m/s k	_	B) zero.		
C) about 30 m/s.		D) more than 30 r	n/s.	
44) Neglecting air resistance	e, a bullet fired straigh	t down from the top of a l	nigh cliff has an	44) _
acceleration of (using g=	$=10 \text{ m/s}^2$)			
A) less than 10 m/s^2		B) 10 m/s^2 .		
C) more than 10 m/s	32	D) depends on the	e height of the cliff.	