This is a Class 1 exam

Lebanon Evangelical School
for Boys and Girls
Loueizeh - Baabda

Stage Exam 02
08DEC2023

Do NOT write in this box. Your MARK will be placed here.

Subject :	Science
Class :	7A, 7B, 7C and 7E
Teacher :	Hazar Al Gharib
Duration :	1 hour

Your name :		*Time taken to complete exam*
Your Class :		
Exam Room :		
How many sheets, including cover sheet :		

- Do not open this paper until the teacher in charge instructs you to do so.
- The most important thing to remember in taking an exam is NEVER PANIC.
- If you are caught cheating in this exam, you will be awarded zero for ALL exams that are taken on this day.

1) All calculators are not allowed

2) This exam is composed of 5 papers

3) All the answers should be written on a separate paper, anything written on the question sheet will NOT be graded.

A- Indicate whether the statement is Correct or Wrong. If wrong, change the underlined word or phrase to make the sentence or statement true. (1pt each)

1. The magnitude of a force is expressed in meters per second (m/s).
2. If a car is increasing in speed, its acceleration is negative.
3. Distance is speed × time.
4. Any force has three characteristics.
5. Pushing a desk is an example of a non-contact force.

B- Put the right term for each given definition. (1pt each)

1. Total distance divided by total time.
2. The push or pull exerted by a body on another.
3. A change in position relative to a reference point.
4. How fast you go in a given period of time.
5. The point where the force is applied.

C- Choose the correct answer:(1pt each)

1. Which distance can be most accurately measured with a ruler?

a) the width of a book b) the length of a river c) distance between cities

2. A person walks 1 mile every day for exercise, leaving her house at 9:00 a.m. and returning to her house at 9:25 a.m. What is the total displacement of her daily walk?

a) 25 minutes b) 1 mile c) 0 miles

3. A displacement of 1 km south, 3 km north, 6 km south, and 2 km north combine to a total displacement of

a) 12km south b) 2km south c) 4km south

4. What was the speed of an object that traveled 100 m in 50 s?

a) 2m/s b) 50m/s c) 2m

5. Which of the following objects is NOT accelerating?

a) a car that is slowing down b) a jogger moving in the same direction at a constant speed c) a car that is speeding up

D- Fill in the blanks with the correct vocabulary word or words (there are more words than needed).(1pt each)

Distance	Time	Speed	Displacement	Acceleration	Zero	Motion

1. _____ refers to the change in the position of an object in relation to the frame of reference or fixed point.

2. The shortest distance covered by an object from the starting point to its final point is called _____.

3. _____ is equal to distance divided by time.

4. ____ is the rate of change in velocity over a certain period of time.

5. Displacement is equal to _____ when the starting point and end point are the same.

E- A force applied on an object, has an effect on the motion of this object. Read each sentence and find this effect. (1pt each)

1- A goal keeper catching a ball

2- Moving a box resting on the ground

3- Father is pressing the break in the car.

4- Pushing a person moving on a swing

5- A tennis player hitting back a ball coming towards him

F-For each of the following examples, say whether it is a contact or a non contact force.(1pt each)

1. 

Gravity

2. 

Hitting a ball with a bat

3. 

Static electricity

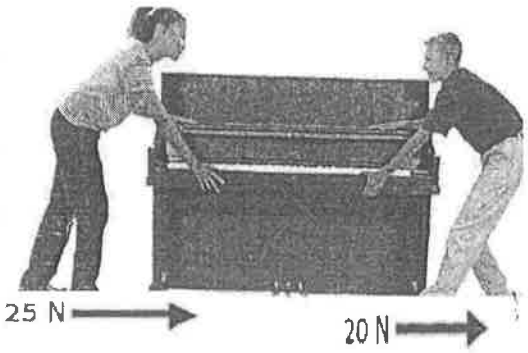
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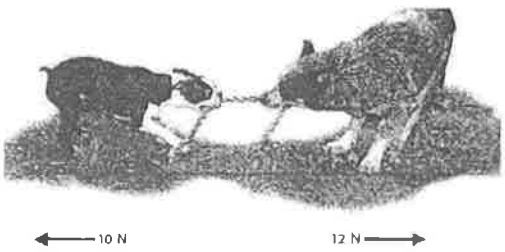
Two magnets repelling each other

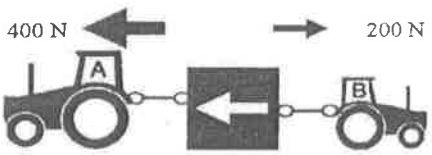
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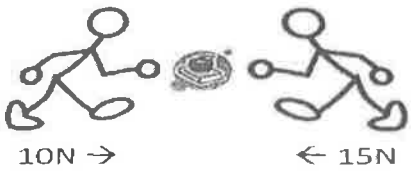
Pedaling a bicycle

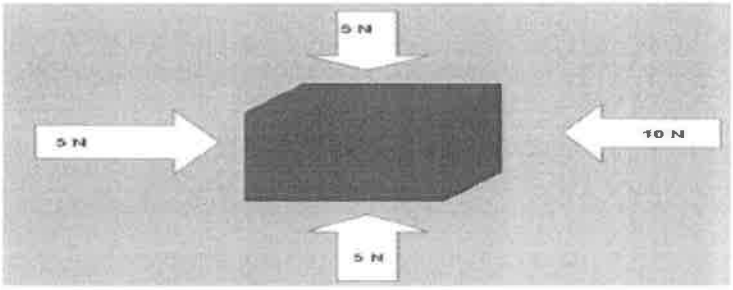
G- Find the net force in each situation (3pts each)

a. 

b. 

c. 

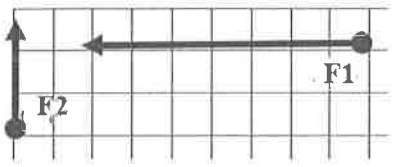
d. 



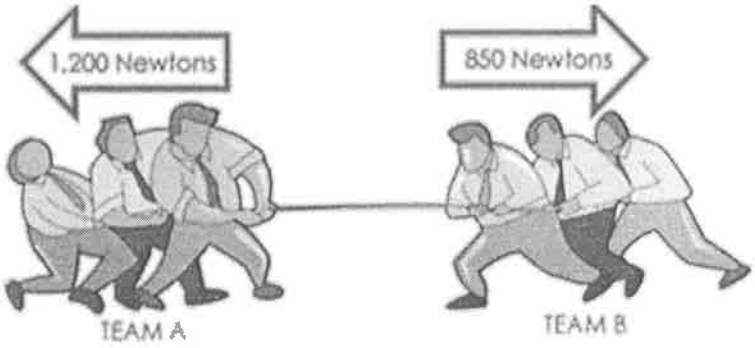
e.

H- What are the characteristics of each force in the given diagram.

Each square represents 1 Newton. (3pts each)



I- Give short answers to the questions related to the following diagrams. (1pt. each)

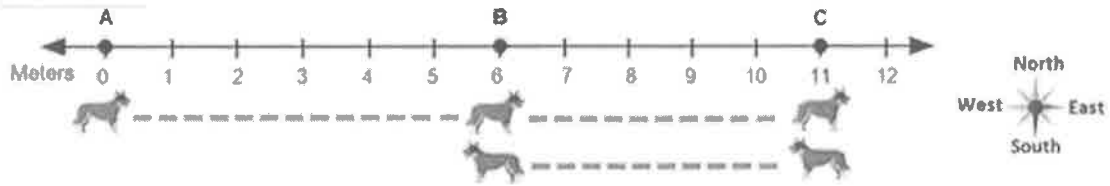


A. The diagram shows a tug of war between two teams A and B.

1. Would you describe the forces in the diagram as push or pull?
2. Would you describe the forces as working together or opposite one another?
3. Are the forces equal?
4. Based on the forces would you expect the rope to not move, move to the left, or move to the right?
5. The net force can be described as:

a) zero b) 1,200N c) 350N d) 2,050N

B. A dog moves from point A to point B to point C, then back to point B along the line shown in the figure below.



1. What is the dog's distance?
2. What is the dog's displacement?

J- Calculation problems. (4pts each)

1. Mike rides his motorcycle at an average speed of 20 m/s for 500 seconds. How far did he ride?

2. Tina rides her bicycle and covers 25 kilometers long to get to her friend's house that is due East of the bike path. If it takes Tina 5 hours then,

a. What is her speed?

b. What is her velocity?

3. A runner has been running at 4 m/s for most of a race. She speeds up to 10 m/s for the last sprint. It takes her 3s to do this. What is her acceleration?

4. Hadi traveled 36Km at a speed of 5km/h, Sami traveled 45km at a speed of 10km/h.

a. Whose journey was quickest?

b. By how many minutes?

A. 1. Wrong (1), Newtons (N) (1)
2. Wrong (1), Positive (1)
3. Correct (1)
4. Wrong (1), four characteristics (1)
5. Wrong (1), Contact force (1)

(9)

B. 1. Average (1) Speed
2. Force (1)
3. Motion (1)
4. Speed (1)
5. Point of application (1)

(5)

C. 1. a (1)
2. c (1)
3. b (1)
4. a (1)
5. b (1)

(5)

D. 1. Motion (1)
2. Displacement (1)
3. Speed (1)
4. Acceleration (1)
5. Zero (1)

(5)

E. 1. Stop the motion (1)
2. Set to motion (1)
3. Stop the motion (1) (Slowing down is accepted)
4. Speed up (1)
5. Change direction (1)

(5)

F. 1. Non Contact (1)
2. Contact (1)
3. Non Contact (1)
4. Non Contact (1)
5. Contact (1)

(5)

G. a. 25 (1) + 20 (1) = 45 N (1) right
b. 12 (1) − 10 (1) = 2 N (1) right
c. 400 (1) − 200 (1) = 200 N (1) left
d. 15 (1) − 10 (1) = 5 N (1) left
e. 5 N (1) − 5 N (1) = 0 N (1) (North / South)
10 (1) − 5 = 5 N (1) left (1) Down / Up

(17)

H. F_1: Horizontal (1) – Left (1) – 7 N (1)
F_2: Vertical (1) – upwards (1) – 3 N (1) (or 2.8 N)

(6)

I. A. 1. Pull (1)
2. Opposite (1)
3. No (1)
4. Move left (1)
5. 1200 − 850 = 350 N (1) (c)

B. 1. A $\xrightarrow{6}$ B $\xrightarrow{5}$ C $\xrightarrow{5}$ B

distance = 6 (1) + 5 (1) + 5 (1) = 16 m (1)

(11)

2. displacement = Δx (1) = $x_f - x_i$
$= x_B - x_A$
$= 6 - 0$,
$= 6$ m (1)
6 meters right (1)
or East

J. 1. $s = 20\,m/s$

$t = 500\,s$

$s = \frac{d}{t} \longrightarrow d = s \times t$ (1) (1)

$= 20 \times 500$

$= 10000\,m$ (1) (1)

(4)

2. a. $s = \frac{d}{t} = \frac{25}{5} = 5\,Km/h$ (1) (1) (1) (1)

(4)

$d = 25Km$

$t = 5h$

b. velocity is speed (1) with direction (1)

$5Km/h$ East

(2)

3. $v_i = 4\,m/s$

$v_f = 10\,m/s$

$t = 3s$

$a = \frac{\Delta v}{t} = \frac{v_f - v_i}{t} = \frac{10-4}{3} = \frac{6}{3} = 2\,m/s^2$ (1) (1) (1) (1)

(4)

4. $d = 36Km$, $s = 5\,Km/h$ } Hadi $\quad$ $d' = 45Km$, $s' = 10\,Km/h$ } Sami

a. For Hadi $\quad t = \frac{d}{s} = \frac{36}{5} = 7.2h$ (1)

For Sami $\quad t' = \frac{d'}{s'} = \frac{45}{10} = 4.5h$ (1)

(4)

$t' < t \longrightarrow$ Sami was the quickest (1)

b. $t - t' = 7.2 - 4.5$ (1)

$= 2.7\,h$ (x60) $\rightarrow$ $162\,min$