

FORCES MEMO

Name: _____

Cell number: _____

E-mail address: _____

QUESTION 1

Choose the best suited option for the following statements:

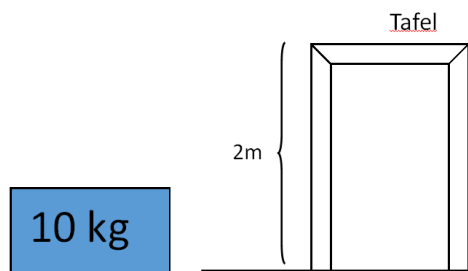
- 1.1 C
- 1.2 B
- 1.3 C
- 1.4 B
- 1.5 D

QUESTION 2

- 2.1. D
- 2.2. F
- 2.3. G
- 2.4. E
- 2.5. A
- 2.6. B
- 2.7. H

QUESTION 3

Pieter lifts a box filled with books and places it on a table as shown below:



3.1. $F = mg$, $F = 10 \cdot 9.8$, $F = 98 \text{ N}$

3.2. $F = mg$, $F = 10 \cdot 9.8$, $F = 98 \text{ N}$.

3.3. $E = mgh$, $E = 98 \cdot 2$, $E = 196 \text{ J}$.

3.4. $P = E/t$, $P = 196 / (2 \cdot 60) = 1.63 \text{ W}$

3.5. $E_{\text{kinetic}} = 0 \text{ J}$

$$E_{\text{potential}} = 196 \text{ J}$$

3.6. $E_{\text{kinetic}} = 98 \text{ J}$

$$E_{\text{potential}} = Fh, E_{\text{potential}} = 98 \cdot 1 = 98 \text{ J}$$

Mechanical energy remains constant

3.7. The Law of Conservation of Energy

QUESTION 4

4.1. Yes, in case displacement is 0 m then the labour =0, but a force can be exercised.

4.2. Distortion.

QUESTION 5

A girl of 40kg runs at an incline that is 7m high in 40 seconds, while a boy with a mass of 50N jogs over a distance of 120m in 25 seconds.

5.1. $W = F \cdot d = 50 \cdot 120$, $W = 6000 \text{ J}$

$$P = W/\text{time}, P = 6000/25 = 240 \text{ W}$$

5.2. $W = mgh = 40 \cdot 9.8 \cdot 7 = 2744 \text{ J}$

$$P = W/\text{time}, P = 2744/40. P = 68.6 \text{ W}$$

QUESTION 6

6.1. Objects attract one another without touching and the direction of the force is always to the middle of the object (e.g. the earth)

6.2. 9.8 m/s^2

6.3. Air resistance can decrease the velocity of the object

6.4. Yes

6.5. No, because the moon has a weaker gravitational force

QUESTION 7

7.1. Friction

7.2. Positive

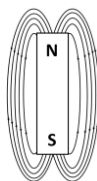
7.3. Negative

7.4. Repel

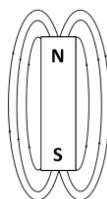
7.5. Stronger

QUESTION 8

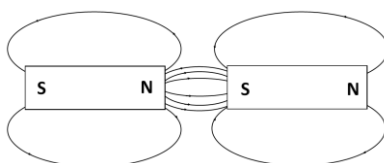
8.1.



8.2.



8.3.



QUESTION 9

Classify the following forces

Description	Contact or no contact force	Name of force
9.1. An object is attracted	Contact	Mechanical force
9.2. Two charges repel one another	Non- Contact	Electrostatic force
9.3. Nail hammered to the wall	Contact	Thrust/ Propulsive force
9.4. A ball is thrown and falls back to earth	Non- Contact	Gravitational forces
9.5. A mass piece is placed on a scale	Contact	Normal force

QUESTION 10

10.1. A large amount of electrostatic force is discharged.

10.2. Avoid outdoor activities

Hide inside a building or a vehicle

Avoid the use of electrical appliances

Do not shower or bathe

10.3. During discharge potential energy converts to electrical energy. Electrical energy is then converted into light energy and warmth energy.