**YEAR 7 SCIENCE**

**ENERGY AND CHANGE**

**TEST : FORCES**

**NAME: MARK: /42**

**Part 1: Multiple Choice**

Choose the correct answer for each question and write its letter in the appropriate box.

1. Which is an example of a force?

|  |  |
| --- | --- |
| **MULTIPLE CHOICE ANSWERS** | |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |
| **6** |  |
| **7** |  |
| **8** |  |
| **9** |  |
| **10** |  |
| **11** |  |
| **12** |  |
| **13** |  |
| **14** |  |
| **15** |  |

(a) A person pushing a pram.

(b) A person pulling a sled.

(c) A person twisting a rope.

(d) All of the above.

2. In what units is force measured?

(a) kilograms

(b) Newtons

(c) joules

(d) Putins

3. A pulling force can be measured by using a?

(a) Set of bathroom scales.

(b) A tape measure.

(c) A spring balance.

(d) A protractor.

4. A balanced force can be described as?

(a) When all forces acting on an object are exactly the same.

(b) When an object accelerates slowly.

(c) When an object slows down quickly.

(d) When an object is moving.

5. An example of an unbalanced force is?

(a) Caleb sitting quietly on a chair.

(b) Jacob travelling on his bike at a constant speed.

(c) Michelle lying down looking at the sky.

(d) Mr Norgrove speeding up in his car.

6. The physics law of Inertia can be described as?

(a) An object will change its shape when it is moved.

(b) An object will want to keep doing what is already doing.

(c) A theory that no one fully understands.

(d) Driving really fast in a car.

7. The effect of mass on inertia is?

(a) The larger the mass the smaller the inertia.

(b) The smaller the inertia the larger the mass.

(c) The larger the mass the larger the inertia..

(d) Mass never effects inertia.

8. An example of something that protects from inertia while in a car is?

(a) Traffic lights.

(b) The front seats.

(c) Seatbelts only.

(d) Seatbelts and airbags.

9. The force that slows objects down is called?

(a) Fructose.

(b) Braking.

(c) Friction.

(d) Defrictation.

10. The amount of friction depends on?

(a) How rough the surfaces are.

(b) How hard the surfaces are pushed together.

(c) The heat stored in the object.

(d) Both (a) and (b).

11. An example of unwanted friction would be:

(a) your shoe gripping the ground while walking.

(b) gripping a pencil.

(c) a cars brakes slowing it down.

(d) the rubbing of the engine pistons inside a car.

12. A method of reducing friction could be:

(a) lubricating the surfaces.

(b) making the objects heavier.

(c) pushing instead of pulling an object.

(d) increasing the surface area of both objects.

13. A non-contact force can be described as:

(a) a force that changes objects without us knowing.

(b) the strongest force in the universe.

(c) a force that moves objects without direct contact.

(d) a force that moves objects by direct contact.

14. An example of a non-contact force could be:

(a) an ice skate sliding on ice.

(b) the wind pushing a windsurfer.

(c) a man falling from a plane.

(d) a person twisting open a jar of peanut butter.

15. The three elements that are magnetic are?

(a) iron, gold and nickel.

(b) copper, tin and steel.

(c) iron, nickel and cobalt.

(d) iron, flour and air.

**Part 2: Short Answer**

Write the answer to each question in the spaces provided.

1. Using arrows to demonstrate the forces experienced; draw a diagram of the balanced forces of a person riding a bike at a constant speed. Ensure you label the arrows to describe what force is being applied.

(5)

2. On the diagram of the car below identify and describe 3 areas that would experience friction while the car was driving.



(3)

3. Circle the correct response to the following statements.

(a) If the forces acting on an object are balanced, then it is not moving.

TRUE / FALSE

(b) You supply a force when you squeeze a tube of toothpaste

TRUE / FALSE

(c) Inertia describes the tendency for an object to change its motion.

TRUE / FALSE

(d) The more the mass an object has the greater its inertia.

TRUE / FALSE

(e) The force of friction acts in the same direction in which the object is moving.

TRUE / FALSE

(5)

4. Classify the following as a push, pull or twist force.

(a) Sweeping the floor \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) Dragging a heavy sports bag \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(c) Throwing a cricket ball \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(d) Hitting a golf ball \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(e) Turning off bathroom sink tap \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(f) Taking the cork out of a wine bottle \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(6)

5. Is there gravity on the moon? Explain why/why not?

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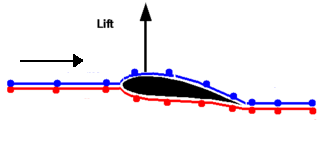
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(3)

6. With the aid of the diagram below explain how a wing is able to achieve lift.



(5)