

- 3 By smoothening the surfaces concerned.
- 4 By polishing.
- 5 By using ball bearings.

Summary

- 1 A force is something that
 - a) makes a body to move or that stops the movement of the body.
 - b) changes the direction of a moving body.
 - c) changes the shape of a body.
- 2 The different types of forces are contact and non-contact forces.
- 3 Examples of contact forces are pull and push.
- 4 Non-contact forces are also known as force fields.
- 5 Examples of non-contact forces or force fields are electrical force, magnetic force and gravitational force.
- 6 The gravitational force, GF , is the product of the mass, m , of a body and the acceleration due to gravity, g , of the gravitational force.
- 7 The gravitational force, GF , is equal to the weight of a body: $GF = mg$.
- 8 Friction is a force that opposes motion.
- 9 The major advantage of friction is that it prevents us from slipping while in motion. It, therefore, aids quick movement.
- 10 Friction causes wear and tear.
- 11 It makes machines do extra work.
- 12 We can use lubricants to overcome friction but at extra cost.

Revision questions 22

- 1 Which of these is not correct? A force
 - A causes movement of a body.
 - B changes direction of a body.
 - C changes the shape of a body.
 - ☒ D is the ability to work.
- 2 Which of these is not an example of non-contact forces?
 - ☒ A Light force
 - B Gravitational force
 - C Electrical force
 - D Magnetic force
- 3 Which of these statements is correct?
 - A Balanced forces are unequal forces.
 - B Unbalanced forces are equal forces.
 - ☒ C Balanced forces are equal forces.
 - D Balanced forces cause the motion of a body.
- 4 Two types of forces are Contact and Non-contact.
- 5 Two types of contact forces are Push and Pull.
- 6 Non-contact forces are also known as Force fields.
- 7 What is the difference between the mass of a body and its weight?
- 8 Whose gravitational force is greater: A man whose mass is 100 kg or a man whose mass is 150 kg?
- 9 Define friction.
- 10 Mention a major advantage of friction.
- 11 Mention three (3) disadvantages of friction.

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Calculation of gravitational force

The formula for calculating gravitational force is mgh .

The force at which an object of mass 'm' comes down from height "h" can be expressed as the force of gravity on the mass = mg , where "g" is the acceleration due to gravity in metres per second squared (ms^{-2}). The work done by gravity in raising the mass is = force \times distance moved = mgh . If M is in kilograms, g in ms^{-2} and h in metres. Then force = mg in newtons.

Work done = Mgh in Joules

Homework

Answers to question 7-11

7. The difference is that the mass of a body is usually constant, while the weight varies across the surface of the earth.

8. The gravitational force of the man whose mass is 150 kg is greater.

9. Friction is a force that opposes motion.

10. The greatest advantage of friction is that by opposing motion, it aids walking, running, movement generally.

10. It causes wear and tear. It opposes motion. It wastes useful energy.