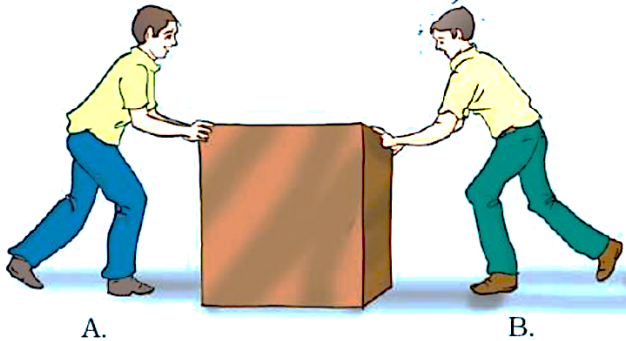


NCERT Exemplar for Class 8 Science Chapter 11 - Force

Multiple Choice Questions

1. In Fig 11.1, two boys A and B are shown applying force on a block. If the block moves towards the right, which one of the following statements is correct?

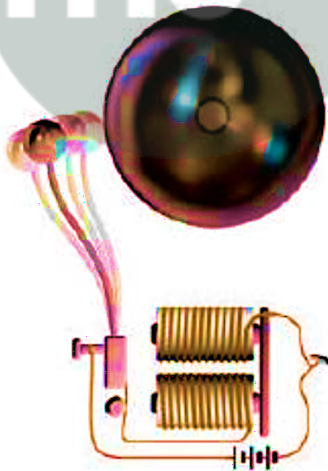


- (a) Magnitude of force applied by A is greater than that of B.
- (b) Magnitude of force applied by A is smaller than that of B.
- (c) Net force on the block is towards A.
- (d) Magnitude of force applied by A is equal to that of B.

Answer: (a) Magnitude of force applied by A is greater than that of B.

Explanation: The block moves towards right, i.e. towards B, so the magnitude of force applied by A is bigger than that of B.

2. In the circuit shown in Fig.11.2, when the circuit is completed, the hammer strikes the gong. Which of the following force is responsible for the movement of hammer?



- (a) gravitational force alone
- (b) electrostatic force alone
- (c) magnetic force alone
- (d) frictional force alone

Answer: (c) magnetic force alone

Explanation: Electric current through the coil turns it into an electromagnet, creating a magnetic force.

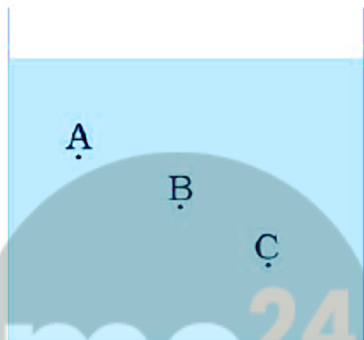
3. During dry weather, while combing hair, sometimes we experience hair flying apart. The force responsible for this is:

- (a) force of gravity
- (b) electrostatic force
- (c) force of friction
- (d) magnetic force

Answer: (b) electrostatic force

Explanation: On combing hair, both comb and hair get oppositely charged due to electrostatic force.

4. Fig.11.3 shows a container filled with water. Which of the following statements is correct about pressure of water?



- (a) Pressure at A > Pressure at B > Pressure at C
- (b) Pressure at A = Pressure at B = Pressure at C
- (c) Pressure at A < Pressure at B > Pressure at C
- (d) Pressure at A < Pressure at B

Answer: (d) Pressure at A < Pressure at B

Explanation: Increase in water leads to increase in depth, increasing pressure.

5. Two objects repel each other. This repulsion could be due to:

- (a) frictional force only
- (b) electrostatic force only
- (c) magnetic force only
- (d) either a magnetic or an electrostatic force

Answer: (d) either a magnetic or an electrostatic force.

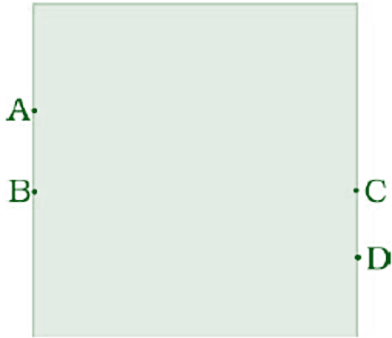
6. Which one of the following forces is a contact force?

- (a) force of gravity
- (b) force of friction
- (c) magnetic force
- (d) electrostatic force

Answer: (b) force of friction

Explanation: Force of attraction acts only when the bodies are in contact.

7. A water tank has four taps fixed at points A, B, C, D as shown in Fig. 11.4. The water will flow out at the same pressure from taps at:



- (a) B and C
- (b) A and B
- (c) C and D
- (d) A and C

Answer: (a) B and C

Explanation: B and C are at the same level, so pressure is same at these points.

8. A brick is kept in three different ways on a table as shown in Fig. 11.5. The pressure exerted by the brick on the table will be:

- (a) maximum in position A
- (b) maximum in position B
- (c) maximum in position C
- (d) equal in all cases.

Answer: (a) maximum in position A

Explanation: Pressure is maximum when area of contact is minimum as in position A.

Very Short Answer Questions

9. A ball of dough is rolled into a flat chapatti. Name the force exerted to change the shape of the dough.

Answer: Muscular Force.

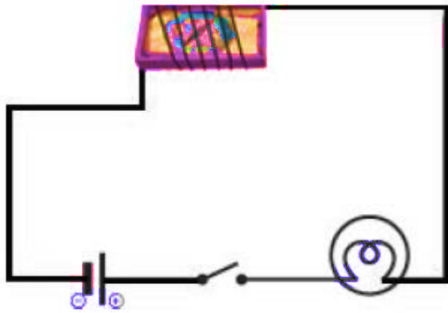
10. Where do we apply a force while walking?

Answer: Force is applied on the ground.

11. A girl is pushing a box towards east direction. In which direction should her friend push the box so that it moves faster in the same direction?

Answer: Towards east.

12. In the circuit shown in Fig.11.6, when the key is closed, the compass needle placed in the match box deflects. Name the force which causes this deflection.



Answer: Magnetic force.

13. During dry weather, clothes made of synthetic fibre often stick to the skin. Which type of force is responsible for this phenomenon?

Answer: Electrostatic force.

14. While sieving grains, small pieces fall down. Which force pulls them down?

Answer: Force of gravity.

15. Does force of gravity act on dust particles?

Answer: Yes, force of gravity acts on dust particles.

16. A gas filled balloon moves up. Is the upward force acting on it larger or smaller than the force of gravity?

Answer: Upward force is larger than the force of gravity.

17. Does the force of gravitation exist between two astronauts in space?

Answer: Yes, the force of gravitation exists between two astronauts in space.

Short Answer Questions

18. A chapati maker is a machine which converts balls of dough into chapati's. What effect of force comes into play in this process?

Answer: Force works on dough to convert it to chapati.

19. Fig.11.7 shows a man with a parachute. Name the force which is responsible for his downward motion. Will he come down with the same speed without the parachute?



Answer: Force of gravity causes downward motion. Without a parachute, speed will be higher.

20. Two persons are applying forces on two opposite sides of a moving cart. The cart still moves with the same speed in the same direction. What do you infer about the magnitudes and direction of the forces applied?

Answer: Forces are equal in magnitude and opposite in direction, thus the cart moves with the same speed in the same direction.

21. Two thermocol balls held close to each other move away from each other when released. Name the force responsible for this phenomenon. Explain.

Answer: Electrostatic force—balls carry similar charges and move away due to repulsion between these charges.

22. Fruits detached from a tree fall down due to force of gravity. We know that a force arises due to interaction between two objects. Name the objects interacting in this case.

Answer: Earth and fruits.

23. A man is pushing a cart down a slope. Suddenly the cart starts moving faster and he wants to slow it down. What should he do?

Answer: He should apply a force to pull the cart up the slope.

24. Fig. 11.8 shows a car sticking to an electromagnet. Name the forces acting on the car. Which one of them is larger?



Answer: Magnetic force (upward) and force of gravity (downward) act. Magnetic force is larger.

Long Answer Questions

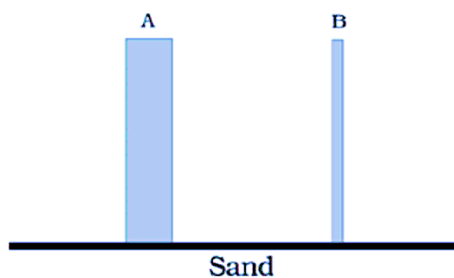
25. An archer shoots an arrow in the air horizontally. However, after moving some distance, the arrow falls to the ground. Name the initial force that sets the arrow in motion. Explain why the arrow ultimately falls down.

Answer: Muscular force is used to stretch the string, changing the shape of the arrow. When released, the arrow regains its position, giving it the initial force for motion. Gravitational force makes it fall down.

26. It is difficult to cut cloth using a pair of scissors with blunt blades. Explain.

Answer: Blunt blades have a larger area, producing low pressure, making cutting difficult. Sharp blades have less surface area, increasing pressure and making cutting easier.

27. Two rods of the same weight and equal length have different thickness. They are held vertically on the surface of sand as shown in Fig.11.9. Which one of them will sink more? Why?



Answer: Rod B, with smaller area of contact, produces more pressure and thus sinks more. Rod A produces less pressure.

28. Two women of the same weight—one wears sandals with pointed heels, and the other wears sandals with flat soles. Who would feel more comfortable on a sandy beach?

Explain.

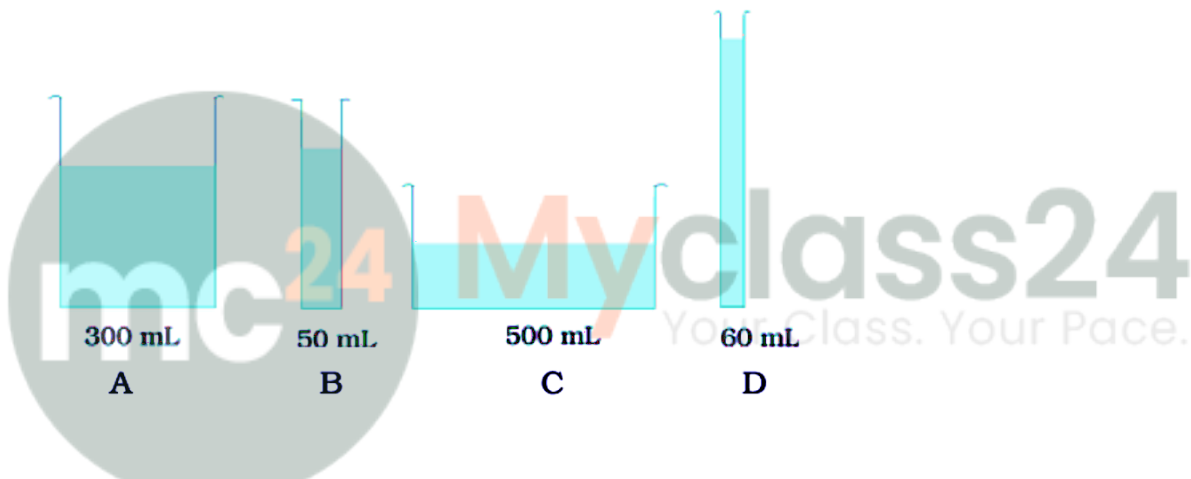
Answer: The woman wearing flat soles feels more comfortable because flat soles have larger area, so less pressure is exerted. Pointed heels exert more pressure, causing them to sink in sand.

29. It is much easier to burst an inflated balloon with a needle than by a finger. Explain.

Answer: A needle has smaller area of contact, producing large pressure, making it easier to burst the balloon compared to a finger.

30. Vessels A, B, C, and D contain different volumes of water as shown in Fig.11.10.

Arrange them in order of decreasing pressure at the base.



Answer: Order is B, D, A, C. Pressure depends on height of the liquid column, not volume.