INDIAN SCHOOL AL WADI AL KABIR		
CLASS: VIII	**DEPARTMENT: SCIENCE** **2026 - 2027**	**DATE: 08/11/2026**
TEXTBOOK- Q &A	**TOPIC:** **EXPLORING FORCES**	**NOTE: A4 FILE FORMAT**
NAME OF THE STUDENT:	**CLASS & SEC:**	**ROLL NO.**

1. Match items in Column A with the items in Column B.

Column A (Type of force)	**Column B (Example)**
(i) Muscular force	(a) A cricket ball stopping on its own just before touching the boundary line
(ii) Magnetic force	(b) A child lifting a school bag
(iii) Frictional force	(c) A fruit falling from a tree
(iv) Gravitational force	(d) Balloon rubbed on woollen cloth attracting hair strands
(v) Electrostatic force	(e) A compass needle pointing North

Solution:

Column A (Type of force)	**Column B (Example)**
(i) Muscular force	(b) A child lifting a school bag
(ii) Magnetic force	(e) A compass needle pointing North
(iii) Frictional force	(a) A cricket ball stopping on its own just before touching the boundary line
(iv)Gravitational force	(c) A fruit falling from a tree
(v) Electrostatic force	(d) Balloon rubbed on woollen cloth attracting hair strands

2. State whether the following statements are True or False.

(i) A force is always required to change the speed of motion of an object.

(ii) Due to friction, the speed of the ball rolling on a flat ground increases.

(iii) There is no force between two charged objects placed at a small distance apart.

[Hint: (i) True

(ii) False. Explanation: Friction slows down or stops moving objects.

(iii) False. Explanation: Electrostatic force acts between charged objects without contact.]

3. Two balloons rubbed with a woollen cloth are brought near each other. What would happen and why?

[Hint: The two balloons will repel each other. This happens because rubbing them with a woollen cloth gives both balloons the same type of static charge, and like charges repel each other due to electrostatic force.]

4. When you drop a coin in a glass of water, it sinks, but when you place a bigger wooden block in water, it floats. Explain.

[Hint: The coin sinks because its density is higher than water, so the gravitational force pulling it down is stronger than the buoyant force from water pushing it up.

The wooden block floats because its density is lower than water, so the buoyant force equals or exceeds gravity, keeping it on the surface.]

5. If a ball is thrown upwards, it slows down, stops momentarily, and then falls back to the ground. Name the forces acting on the ball and specify their directions.

(i) During its upward motion

(ii) During its downward motion

(iii)At its topmost position

[Hint: (i) During its upward motion: Gravitational force pulls the ball downward, slowing it down, while the initial throwing force acts upward but weakens.

(ii) During its downward motion: Only gravitational force pulls the ball downward, making it speeds up.

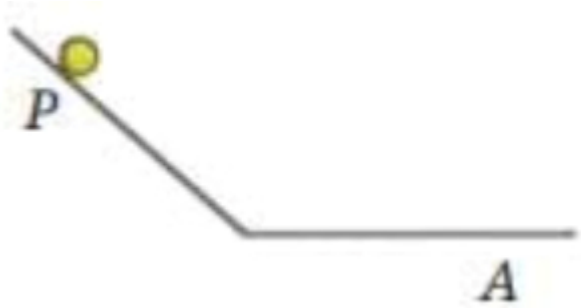
(iii) At its topmost position: Gravitational force pulls downward; the ball stops momentarily before falling, with zero speed at that instant.]

6. A ball is released from the point P and moves along an inclined plane and then along a horizontal surface as shown in the figure. It comes to stop at the point A on the horizontal surface. Think of a way so that when the ball is released from the same point P, it stops:

(i) before the point A

(ii) after crossing the point A.

[Hint:(i) To stop before point A, make the surface rougher to increase frictional force, which slows down the ball.
(ii) To stop after crossing point A, make the surface smoother to reduce frictional force, allowing the ball to roll farther.]

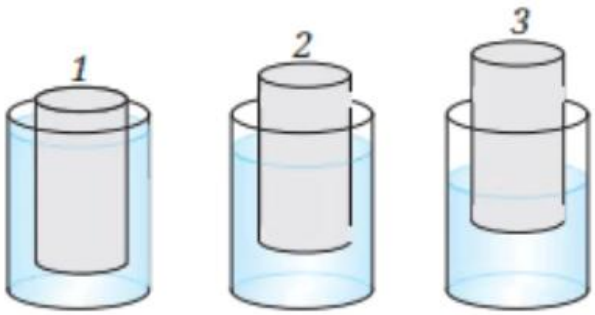


7. Why do we sometimes slip on smooth surfaces like ice or polished floors? Explain.
[Hint: We slip on smooth surfaces because there is very little friction between our feet and the surface. Without enough friction to grip and oppose sliding, it's easy to lose balance and fall.]

8. Is any force being applied to an object in a non-uniform motion?
[Hint: Yes, a force is applied to an object in non-uniform motion (when speed or direction changes). Force causes these changes, like speeding up, slowing down, or turning.]

9. The weight of an object on the Moon becomes one-sixth of its weight on the Earth. What causes this change? Does the mass of the object also become one-sixth of its mass on the Earth?
[Hint: The change happens because the Moon's gravitational force is weaker than Earth's (about one-sixth). Weight depends on gravity, so it's less on the Moon. The mass stays the same everywhere, as it is the amount of matter in the object.]

10. Three objects 1, 2, and 3 of the same size and shape but made of different materials are placed in water. They dip to different depths as shown in the figure. If the weights of the three objects 1, 2, and 3 are w1, w2, and w3, respectively, then choose the correct relation.
Options:
(i) w1=w2=w3
(ii) w1>w2>w3
(iii) w2>w3>w1
(iv) w3>w1>w2



[Hint: (ii) w1>w2>w3
Explanation: Heavier objects sink deeper because their weight overcomes the buoyant force more, while lighter ones float higher.]

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