# परमाणु ऊर्जा शिक्षण संस्था
# Atomic Energy Education Society
# कार्यपत्रक / Worksheet (2025-26)

**कक्षा /Class:_8 विषय /Subject: Science माह/ Month: August अंक/Marks: 40**

**दिया गया पाठ्यक्रम/Portion covered: Chapter 5: Exploring forces**

विद्यार्थी का नाम/Name of the student: _____

अनुक्रमांक /Roll No._____ कक्षा/अनुभाग Class /Sec.:_____ दिनांक /Date: _____

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**Section A**

**Choose the correct answer from the given options. (1*10 = 10 )**

1. Which of the following is a contact force?
   (A) Gravity (B) Magnetic force (C) Friction (D) Electrostatic force
2. The force that opposes the motion of objects moving through a fluid is called:
   (A) Gravitational force (B) Frictional force (C) Buoyant force (D) Resistive force
3. What happens to the gravitational force between two objects if the distance between them doubles?
   (A) It becomes four times (B) It halves (C) It becomes one-fourth (D) It doubles
4. Which of these does not affect friction between two surfaces?
   (A) Nature of surfaces (B) Normal force (C) Surface area in contact (D) Speed of motion
5. A force that acts without physical contact is called:
   (A) Contact force (B) Non-contact force (C) Magnetic force only (D) Frictional force
6. Which of these pairs are non-contact forces?
   (A) Friction and tension (B) Gravity and magnetic force (C) Tension and normal force (D)Friction and normal forces
7. In which situation is the net force on a body zero?
   (A) Body at rest
   (B) Body moving with constant velocity
   (C) Both (A) and (B)
   (D) Only when forces are unequal
8. What is the direction of frictional force when a block slides to the right?
   (A) To the right (B) Downwards (C) Upwards (D) To the left
9. Which force keeps planets in orbit around the sun?
   (A) Friction (B) Electrostatic force (C) Gravitational force (D) Magnetic force
10. What does a force always do?
    (A) Changes shape of an object (B) Produces motion or tends to produce motion (C) Opposes motion always (D) Reduces weight

**For question numbers 11 to 14, two statements are given, one labelled Assertion(A) and the other labelled Reason(R). Choose the correct option from the codes (A), (B), (C) and (D) as given below (1*4= 4M)**

**Options:**

(A) Both A and R are true, and R is the correct explanation of A.
(B) Both A and R are true, but R is not the correct explanation of A.
(C) A is true, but R is false.
(D) A is false, but R is true.

1. **Assertion :** Friction always acts opposite to the direction of motion.
   **Reason :** Friction arises due to the roughness between two surfaces.
2. **Assertion :** A book lying on a table experiences gravitational force but does not move.
   **Reason :** The normal reaction from the table balances the weight of the book.
3. **Assertion :** Magnetic force can act across a distance without direct contact.
   **Reason :** Electric forces also act across a distance and are examples of non-contact forces.
4. **Assertion :** Air resistance increases with the speed of a falling object.
   **Reason :** At higher speed, a body collides with more air molecules, increasing resistive force.

**Case Based Question: Read the following passage and answer the following questions give**
**Case:**

A person is pushing a heavy wooden crate along a rough floor. The crate moves slowly even though the person applies significant effort. The floor is not smooth, and the crate shows signs of slight wear at the contact surface. When the person stops pushing, the crate immediately comes to a halt.

**Questions:**

1. What type of force is acting to slow down the crate as it moves?
2. Why does the crate stop soon after the person stops applying force?
3. How does the roughness of the floor influence the motion of the crate?
4. If the floor were replaced by a smooth surface, what change would you expect in the effort required to keep the crate moving?

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**Section -B**

**Short Answer Type Questions (Type -1): (2*5 = 10M)**

1. Define the term “balanced forces” and provide an example.
2. Explain how gravitational force is a non-contact force with an everyday example.
3. Why does a car slow down when the brakes are applied, even though no opposing force is being pushed by another object?
4. What happens to the motion of a moving object when an unbalanced force acts on it?
5. A ball kept on the floor does not move on its own. Which force is responsible for keeping it at rest? Name the force.

**Short Answer Type Questions (Type -2): (3*4 = 12M)**

1. Describe how surface smoothness affects friction and the implications for designing soles of shoes.
2. What is air resistance? Give two examples of situations where air resistance plays a significant role.
3. A satellite orbits Earth without falling to the ground—explain how gravitational force and motion combine to keep it in orbit.
4. Differentiate between balanced and unbalanced forces with suitable examples