

Force and Pressure

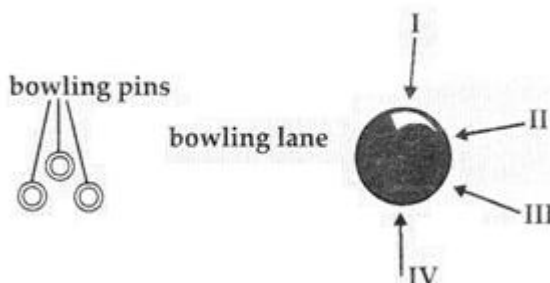
Application Based Questions

Q.1. Multiple choice question:

Directions: Read the following questions and choose the answer that best answers the questions.

1. Study the given actions.
(I) Striking a match stick.
(II) Sharpening a knife.
(III) Pushing a cupboard from one room to another.
(IV) Writing with a pencil.
Friction is useful for
(a) I and II only (b) I and III only (c) II and IV only (d) All of the above
2. Sohan is unable to lift a box off the ground. The force that make it difficult to do so is
(I) The weight of the box (II) The weight of the Sohan
(III) Gravity (IV) Friction
(a) I and II only (b) I and III only (c) II and III only (d) III and IV only
3. Which of the following statements is incorrect?
(a) Friction helps us to twist an object
(b) Friction is a force that opposes motion
(c) Objects have weight because of frictional force between them and the Earth
(d) More friction is produced between rough surfaces than between smooth surfaces

4. Sonia wants to hit some pins in a bowling game as shown in figure. To do so, where she should apply a force on the ball.



- (a) I (b) II (c) III (d) IV
5. Sanjana pushed a box across the floor. It comes to a stop shortly after. Which one of the following reasons explain this?
- (a) Gravity is acting on the box in the direction opposite to the box's movement.
 - (b) Friction is acting on the box in the direction opposite to the box's movement.
 - (c) Friction is acting on the box in the same direction of the box's movement,
 - (d) The heat produced by the box's movement slows down the box.
6. Sonia dropped some steel pins into a jar of liquid. She then tried to remove the pins using a magnet over the surface of the jar. But she found that pins were not attracted to the magnet. Which of the following could be the most likely reason for this?
- (a) The jar is made of non-magnetic material
 - (b) The jar is made-of a magnetic material
 - (c) Sonia moved the magnet over the surface of jar too slowly
 - (d) The pins are non-magnetic
7. Which of the following statements is correct about gravity?
- (a) The larger the mass/ the greater is gravity
 - (b) Gravity is commonly called weight
 - (c) It makes the moon go around the earth
 - (d) The larger the weight of an object, greater is the gravity

Q.2. Subjective questions:

- 1.** A hole in a ship is much more serious if it is close to the bottom than near the surface of the ship. Give reason?

Ans.
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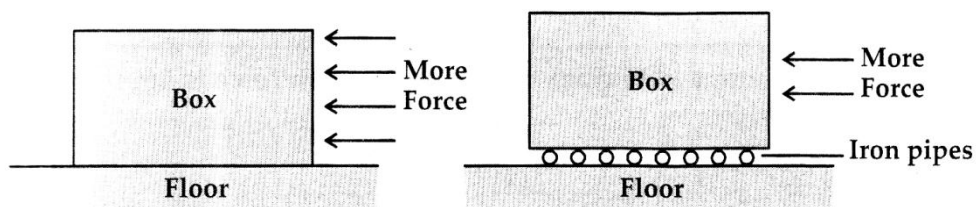
- 2.** Give an example of:
(i) Use of force to cause an object at rest to move.
(ii) Force changing the direction of movement of an object.
(iii) Force stopping a moving object.

Ans.
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- 3.** How the fitting of special trains and train tracks with magnets allows the train to float above the tracks?

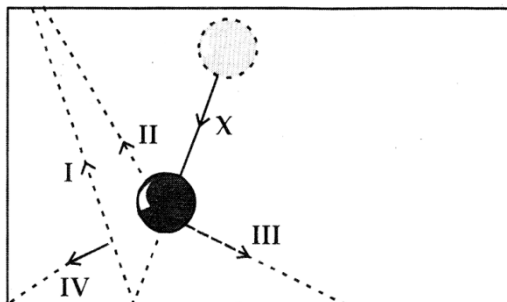
Ans.
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- 4.** Sonia wanted to move a heavy box to a long distance. She pushed the box but found it very difficult. However when she used some iron pipes and rolled the box over then, it was very easy. Give reason why?



Ans.
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5. Shyam kicked a ball that travelled on path X.



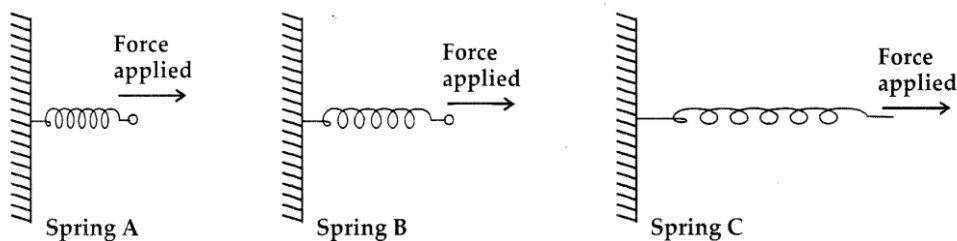
In which path I, II, III or IV, would the ball continue to travel? Give reason in support of your answer.

Ans.

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6. Study the diagrams given.



- (i) Which of the given spring is being pulled with largest force?

Ans.

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- (ii) Which of the following properties of springs are changed when force is applied to them. Tick the correct answer.

(a) Weight (b) Mass (c) Length (d) Shape

Ans.

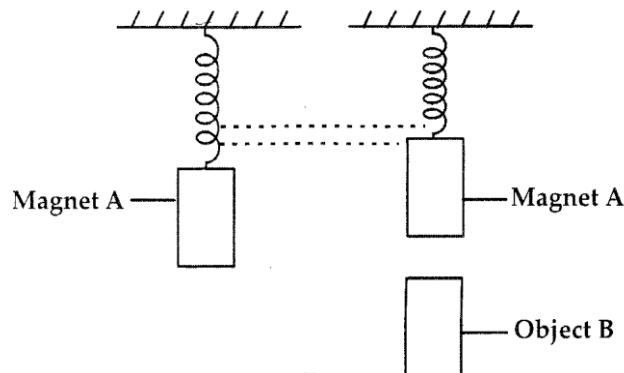
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(iii) What happens to the springs when force applied to them are removed?

Ans.
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7. Study the given diagram. The spring showed below stretched less when object B was placed under magnet A.



What object is B likely to be?

Ans.
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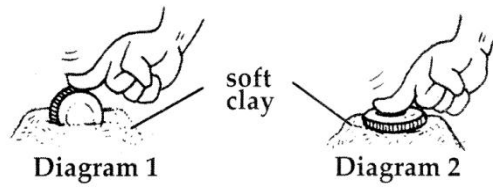
8. Complete the paragraph using the given terms/words.

Area, Large, Painful, Unit, Force, Sinking, Pressure, Smaller

Pressure is ____ per ____ area. Therefore the same amount of force acting on a ____ surface area produces a greater pressure on that surface. That is why, snow-shoes have ____ area to prevent you from ____ into the snow. Also, stiletto heels that have very small ____ produce an enormous ____ and can be very ____ when a lady wearing them steps on your foot.

Ans.
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9. Why it is easier to push a coin into soft clay as shown in diagram 1, compared to them diagram 2.



Ans.

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