PHYSICS

BOOKS - NAND LAL PUBLICATION

FRICTION

Questions Asked In Between The Chapter

1. Have you ever thought why the vehicle slows down when brakes are applied?

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2. Have you seen a ball moving on the ground stopping after sometime?

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3. Why we slip when we step on a banana peel?

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4. Why is it difficult to walk on a smooth and wet floor?

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5. Does the book stop this time, too?

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6. Can you think of an explanation?

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7. Can we say that a force must be acting on the book opposing its motion?

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8. Is the friction the same for all the surfaces? Does it depend on the smoothness of the surface?

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9. Do you observe any difference in the readings of the spring balance in the above two cases?

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10. What might be the reason for this difference?

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11. Repeat this activity by wrapping a piece of jute bag around the brick. What do you observe?

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12. How far does it move on the table before coming to rest?

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13. In which case the distance covered is the minimum?

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14. Why is the distance covered by the pencil cell different every time? Try to reason why.

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15. Does the distance covered depend on the nature of the surface on which the cell moves?

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16. Could the smoothness of the surface of the cell also affect the distance traveled by it?

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17. I shall try the activity by wrapping a piece of sandpaper around the cell.

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18. Is it easier to hold a khulhar (earthern pot) or a glass tumbler?

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19. Suppose the outer surface of the tumbler is greasy or has a film of cooking oil on it. Would it become easier or more difficult to hold it?

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20. Would it be possible to hold the glass at all if there is no friction?

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21. Can you imagine being able to walk if there were no friction at all?

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22. Could it happen if there were no friction between the chalk and the board?

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23. Vigorously rub your palms together for a few minutes. How do you feel?

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24. Have you ever thought why the sole of your shoes is grooved ?

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25. Fill in the blanks

Sprinkling of powder on the carom board .....friction.

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26. Do you feel it easier to move the book in this way than to slide it ?

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27. Do you think that resistance to the motion of the book has been reduced? Have you seen heavy machinery being moved by placing logs under it?

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28. Can you now understand why wheel is said to be one of the greatest inventions of mankind?

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29. Do you find any similarity in its shape and of a bird?

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Exercise Fill In The Blanks

1. Fill in the blank

Friction opposes the .....between the surfaces in contact with each other.

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2. Fill in the blanks

Friction depends on .....of surfaces.

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3. Fill in the blanks

Friction produces.....

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4. Fill in the blanks

Sprinkling of powder on the carom board .....friction.

Watch Video Solution

5. Fill in the blanks

Slinding friction is .....than the static friction.

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Exercise

1. Four children were asked to arrange forces due to rolling, static and slinding frictions in decreasing order. Their arrangements are given below. Choose the correct arrangement.

A. Rolling, static, sliding

B. Rolling sliding, static

C. Static, sliding, rolling

D. Sliding, static, rolling

Answer: C

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2. Alida runs her car on the dry matble floor, wet marble floor, newspaper and towel spread on the floor. The force of friction acting on the car on different surfaces in increasing order will be

A. wet marble floor, dry marble floor, newspaper and towel.

B. newspaper, towel, dry marble floor, wet marble floor.

C. towel, newspaper, dry marble floor, wet marble floor.

D. dry marble floor, wet marble floor, towel, newspaper.

Answer: A

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3. Supose your writing desk is tilted a little. A book kept on it starts sliding down. Show the direction of frictional force acting on it.

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4. You spill a bucket of soapy water on a marble floor accidently. Would it make it easier or more difficult for you to walk on the floor? Why ?

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5. Explain why sportsmen use shoes with spikes.

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6. Iqbal has to push a lighter box and Seema has to push a similar heavier box on the same floor. Who will have to apply a larger force and why?

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7. Explain why sliding friction is less than static friction.

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8. Give examples to show that friction is both a friend and a foe.

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9. Explain why objects moving in fluids must have special shapes.

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Additional Questions Multiple Choice Questions

1. If a box is pushed from north to south direction the force of friction will act towards:

A. south direction

B. north direction

C. east direction

D. west direction.

Answer: B

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2. Why is it difficult to walk on ice?

A. Friction is low

B. Pressure is low

C. Friction is high

D. Pressure is high.

Answer: A

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3. Sliding friction is ..... than rolling friction.

A. less

B. more

C. equal

D. can't say.

Answer: B

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4. Which of the following does not have a streamlined shape?

A. aeroplane

B. boat

C. bird

D. bus

Answer: D

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5. Friction is an example of

A. contact force

B. non-contact force

C. pressure

D. weight.

Answer: A

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Additional Questions Fill In The Blanks

1. The frictional force exerted by fluids is called

..... .

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2. Friction can be increased by making a surface ..... .

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3. The common name of liquids and gases is ..... .

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4. Force of friction is measured in:

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5. Birds have streamlined shape to ..... friction.

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Additional Questions True Or False

1. Friction can never be entirely eliminated. true/ false

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2. Friction can be reduced by making a surface rough. true/ false

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3. Why is it difficult to walk on a smooth and wet floor?

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4. Distance covered by a moving ball depends on the nature of the surface on which it moves. true/false

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5. It is difficult to move a box from rest than to move it when it is already in motion.

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Additional Questions One Word Answer

1. Give example of any one lubricant.

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2. Name the force responsible for holding an object in its place.

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3. What is used to move coins smoother on carrom board?

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4. What kind of friction is exerted on an object in motion in water?

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5. What enables us to fix nails in a wall?

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Additional Questions Very Short Answer Type Questions

1. Rolling friction is:

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2. What are lubricants?

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3. What is the cause of friction? In which case is it maximum?

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4. Why do gymnasts apply some coarse substance on their hands?

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5. Name any machine in which-ball bearings are used to reduce friction.

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Additional Questions Short Answer Type Questions

1. Why do we need to apply more force to move a box from a rough surface than a smooth surface?

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2. What is a spring balance?

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3. Why do our hands become warm when we rub them?

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4. Why do soles of our shoes get worn out after sometime?

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5. Why is it convenient to pull luggage fitted with rollers?

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6. What is fluid friction? What are the factors on which it depends? Why do birds and fishes have streamlined shape?

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7. What are different types of friction. Illustrate with the help of suitable diagrams.

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Additional Questions Long Answer Type Question

1. Write some methods to both increase and decrease friction.

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Additional Questions Higher Order Thinking Skills Hots

1. What will happen to a moving object if there is no friction acting on it?

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Additional Questions Value Based Question

1. Rahul was going to market with his friend when he saw that an old man was about to step on a banana peel thrown by some body on the road. He immediately ran and stopped

the man from stepping on the banana peel.

Why did Rahul stop the old man from stepping on the banana peel?

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Why did Rahul stop the old man from stepping on the banana peel?

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Additional Questions Self Practice Problems

1. Why can't we write properly on an oiled sheet?

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2. Why do gymnasts apply some coarse substance on their hands?

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3. Friction is an example of

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