2nd Term Worksheet [2018 – 19]

Subject – Physics

Class – VI

Name : **Sec. :**

Chapter – 3
[Force]

Check Point:

[A] Fill in the blanks: [47]

1. When you draw water from a well, you _____ the rope. (push/pull)
2. When you hold a bucket full of water, the bucket _____ your hand. (pushes/pulls)
3. In the game of tug-of-war, each team _____ the rope. (pulls/pushes)
4. In the game of cricket, the stumps fall down when the ball strikes them. The ball _____ the stumps. (pushes/pulls)

[B] Answer the following questions: [47]

1. Give examples of any two situations where push is applied and also indicate its effect.

Ans. _____

2. Give examples of any two situations where pull is applied and also indicate its effect.

Ans. _____

3. Why does the shape of an ointment tube change when we squeeze it?

Ans. _____

4. What happens when you repeatedly hammer a piece of aluminium?

Ans. _____

5. Give two examples from your daily life where force changes the shape of the object?

6. What happens to the spring of the sofa when you sit on it?

Ans.

7. What happens to the speed of the ball when a hockey player hits it?

Ans.

8. What happens to the speed of your bicycle when you pedal faster?

Ans.

9. What happens to the speed of your bicycle when you apply brakes to it?

Ans.

[C] Answer the following questions: [51]

1. What is force? Write its unit in SI system.

Ans.

2. What are the effects of force?

Ans.

3. Name any three types of force.

Ans. _____

4. Give two examples of muscular force.

Ans. _____

5. Which force can be used to collect iron pins accidentally scattered on a floor?

Ans. _____

6. Name the force responsible for wearing out of a bicycle tyre.

Ans. _____

7. What is the weight of a body? Name the device used to measure the weight of an object.

Ans. _____

[D] Answer the following questions: [57]

1. Define frictional force.

Ans. _____

2. State two advantages and two disadvantages of friction.

Ans. _____

3. Fill in the following blanks:

a. The sole of a shoe wears out due to _____.

b. Frictional force always opposes _____.

4. Why does a man slip when he steps on a banana skin?

Ans. _____

5. Why is it difficult to walk properly on a smooth floor?

Ans. _____

6. Which will cause more friction a rough surface or a smooth surface?

Ans. _____

7. What are the different methods of reducing friction?

Ans. _____

8. Mention some methods of increasing friction.

Ans. _____

Keywords: **[57]**

Force: _____

Frictional Force: _____

Gravity: _____

Electrostatic Force: _____

Machine: _____

Spring Balance: _____

Weight: _____

Exercise: **[58-61]**

[A] Multiple Choice Questions: [58-59]

(i) The force may cause in an object

(a) change in inertia (b) change in mass

(c) change in weight (d) none of these

(ii) The unit of force is

(a) newton (b) kilogram

(c) metre (d) second

(iii) Which of the following is not an example of the force of gravity:

(a) A leaf falling from a tree (b) A boy pushing a cart on a level plane

(c) A diver jumping into a swimming pool

(d) A stone falling from the top of tower

(iv) The unit of weight in S.I system is

(a) kilogram (b) newton

(c) gram (d) metre/second

(v) The weight of a body equals to

(a) mass × gravity (b) mass / gravity

(c) gravity/ mass (d) none of these

(vi) The force of friction is

(a) always disadvantageous (b) always advantageous

(c) either advantageous or disadvantageous

(d) neither advantageous nor disadvantageous

(vii) Grooves in a tyre

(a) increase friction of the tyre with the road

(b) decrease friction of the tyre with the road

(c) do not affect friction of the tyre with the road

(d) make the tyre good looking

(viii) Which of the following is an example of force at a distance?

(a) opening a door (b) pushing a can filled with water

(c) wringing the clothes to remove water (d) gravitational pull of the earth

(ix) Weight of a body is measured by using the formula

(a) w = ma (b) w = m/g

(c) w = mg (d) w = g/m

(x) Frictions always opposes

(a) weight (b) motion

(c) mass (d) pressure

[B] Fill in the blanks: [59]

1. The friction always acts in the _____ direction of the movement of the object.
2. The maximum value of friction is called _____ friction.
3. In machines ball bearings and roller bearings are used to _____ friction.
4. The spring balance is used to measure _____.
5. Rolling friction is much less than the _____ friction.

[C] Match the items in column I with the correct choices in column II: [59]

	Column I	**Column II**
1.	The force acting due to the earth on a body	muscular force
2.	A man pulling a bucket of water out of a well	gravitational force
3.	The force exerted by a cricket bat on the ball	impact forces
4.	A boy pulling at the rope tied to the collar of his goat	the difference of two forces
5.	The resultant of the two forces acting in opposite direction	change in the direction of motion

[D] Write T for true and F for false statements: [59]

1. The frictional force is always equal and opposite to the applied force. _____
2. The force of friction is never useful to us. _____
3. The force of friction does not depend on the nature of surface. _____
4. The friction has no limit. _____
5. Friction can be reduced by streamlining the body of the moving object. _____

[E] Differentiate between: [60]

1. Tyres having grooves and fishes having streamlined bodies

2. Muscular force and gravitational force

3. Static friction and sliding friction

[F] Define the following terms and give an example of each: [60]

1. Gravitational force: _____

2. Muscular force: _____

3. Electrostatic force: _____

[G] Give reasons for the following: [60]

1. Sparks are produced when a pair of scissors is sharpened against a grinding wheel

2. A piece of chalk wears out as it is used on a blackboard.

3. Oil is applied to the moving parts of a machine.

4. Powder is applied to a carom board.

5. School bags are provided with wide straps to carry them.

6. A sharp knife cuts objects more effectively than a blunt knife.

7. A man walking on the street slips on a banana skin.

[H] Answer these questions: [60]

1. Write some properties of friction.

Ans.

2. State three effects of forces. Give suitable examples.

Ans.

3. In the game of carom, why does the direction of the striker change when you take a rebound?

Ans.

4. When you throw a ball upwards, what happens to its speed while it is going up? Why?

Ans.

5. What is the unit of force?

Ans.

6. Name the types of force that we observe in daily life

Ans.

7. Which force is responsible for raising our body hair when we try to take off a terylene or polyester shirt in a dry weather.

Ans.

8. Which force makes a rolling ball stop?

Ans.

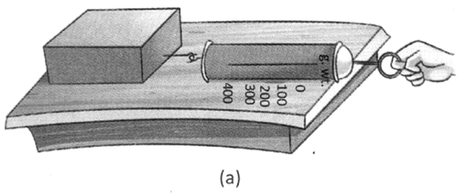
9. Which force do the animals apply while moving, chewing and doing activities?

Ans.

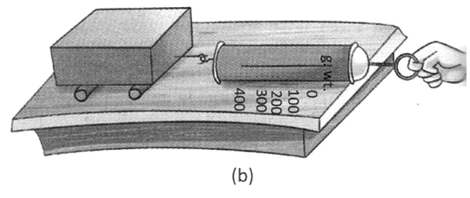
10. Why do the shape and size of a balloon change when filled with air or water?

Ans.

11. Name the type of friction in the following figures:



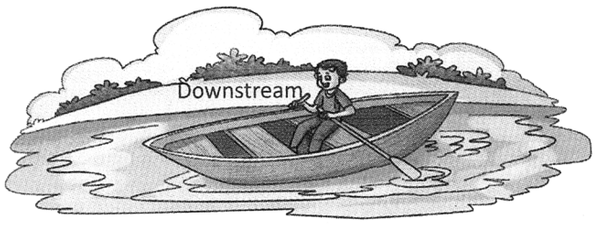
(a)



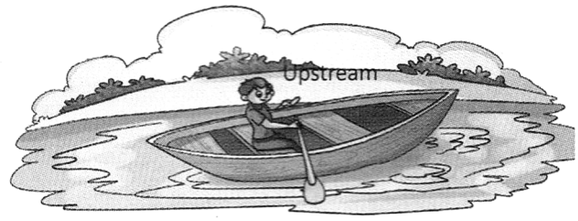
(b)

[I] Solve the following numerical: [61]

1. Sita sails a boat with a force of 800 N along an opposite direction of the stream as shown in the figure. If the force applied by the stream is 500 N, calculate the following:



(*a*)



(*b*)

a. Resultant force acting downstream (i.e., the direction of the river and boat is the same) fig. a.

b. Resultant force acting upstream (i.e., the direction of the boat is opposite to the direction of the river) fig.b

Chapter – 4
[Simple Machines]

Check Point:

[A] Answer the following questions: [65]

1. What is a machine?

Ans. _____

2. Give some examples of simple machines.

Ans. _____

3. Give some examples of complex machines.

Ans. _____

4. Define efficiency of machine.

Ans. _____

[B] Answer the following questions: [73]

1. Define a lever.

Ans. _____

2. What are the three types of a lever? Give an example of each.

Ans. _____

3. What is mechanical advantage of a machine?

Ans. _____

4. What is a position of fulcrum, load and effort in all three kinds of levers?

Ans. _____

5. In what way single person can easily load a heavy drum into a truck?

Ans. _____

6. Define an inclined plane.

Ans. _____

7. What is the main advantage of a pulley?

Ans. _____

8. Why do all machines require proper care and maintenance?

Ans. _____

9. What do you mean by the efficiency of a machine?

Ans. _____

Keywords: **[73]**

Machine: _____

Fulcrum: _____

Load: _____

Effort: _____

Exercise: **[74-76]**

[A] Multiple Choice Questions: [74]

(i) Which of the following is not a function of a machine?

(a) To make our work convenient

(b) To enable us lift more load with less force

(c) To enable us make the measurement correctly

(d) To make our work faster

(ii) A force applied to a machine to do mechanical work is called

(a) effort (b) load

(c) efficiency (d) output

(iii) A beam balance is an example of

(a) inclined plane (b) lever of first type

(c) lever of second type (d) lever of third type

(iv) The door knob of the house is an example of

(a) lever (b) inclined plane

(c) wedge (d) wheel and axle arrangement

(v) The proper care and maintenance of machines require

(a) to make them good looking (b) for preserving them for future

(c) for their efficient and longer use (d) all of these

[B] Fill in the blanks: [74]

1. In the lever of second type _____ is in the middle.
2. The pulley changes the _____ of force.
3. The outer of machine are painted to protect them from _____.
4. A machine having 100% efficiency is known as an _____ machine.
5. _____ is used to lift heavy objects like cars.

[C] Write T for true and F for false statements: [75]

1. The knife is a lever of first type. _____
2. In a lever of type three, effort is in between the fulcrum and the load. _____
3. The single fixed pulley helps us to multiply force. _____
4. The greater the slope of an inclined plane, the easier is to push a load up along it. _____
5. The point at which a lever is supported is called a fulcrum. _____
6. A sewing machine is an example of simple machine. _____
7. A crowbar helps you to shift a heavy load faster. _____
8. It is easier to roll a heavy drum on an inclined plane than carrying it up directly. _____
9. A pair of tongs is an example of lever of second type. _____
10. A pulley fixed on a well helps in drawing more water with less effort. _____

[D] Match the items in column I with the correct choices in column II: [75]

	Column I	Column II
1.	Lever of first type	nut and bolt
2.	Inclined plane	nail
3.	Lever of second type	pulley
4.	Screw	sewing machine
5.	Lever of third type	bottle-opener
6.	Wedge	see-saw
7.	Wheel and axle	ice-tongs

[E] Find the odd-one out. Give reasons for your choice: [75]

1. pulley, inclined plane, watch, screw jack

2. mango-cutter, nut-cracker, bottle-opener, fire tongs

3. pair of scissors, bread knife, water pump, see-saw

4. ramp, revolving staircase, wheels, wooden plank

5. bottle-opener, screw jack, lemon squeezer, a pair of tongs

[F] Give reasons for the following: [75]

1. A machine cannot be 100 per cent efficient

2. The mechanical advantage of a lever of third order is always less than one

3. Hill roads are built to have gradual slopes.

4. A lever of second order always increases force

5. A pulley has a groove cut along its rim

[G] Classify the following levers. Draw diagrams showing fulcrum, points of application of the load and efforts: [76]

1. human arm holding a load

2. a bread knife

3. bottle-opener

4. see-saw _____

5. pincers _____

6. spade _____

7. nut-cracker _____

8. wheel barrow _____

[H] Answer these questions: [76]

1. Draw a neat diagram of a lever and mark the positions of load, effort and fulcrum on it. Which type does this lever belong to?

Ans. _____

2. Why do we call the inclined plane a machine?

Ans. _____

3. Name some simple machines.

Ans. _____

4. Give some examples of levers of second type.

Ans. _____

5. Why do we use wheels in motor vehicles?

Ans. _____

[I] Solve the following numerical: [76]

1. A load of 400 N can be lifted by a force of 40 N with the help of a lever. Find the mechanical advantage.

2. The effort arm of a lever is 2 m long and the load arm is 4 m long. Find the ffort required to lift a load of 10 N.

3. In a certain machine an effort force of 10 N is used to lift a load of 30 N. Calculate the mechanical advantage of the machine.

4. The effort arm of a lever is 50 m and the load arm is 5 m, calculate the effort force required to lift a load of 200 N.