

Exercises

A. Tick the correct option:

1. _____ is a simple machine.

Answer- (c) screw

2. _____ is a complex machine.

Answer- (d) computer

3. In a Lever, the force applied is called _____.

Answer- (b) effort

4. In _____ class lever, load is between fulcrum and effort.

Answer- (a) second

5. A small wheel with a groove around its edge is called a _____.

Answer- (b) pulley

B. Short Answer Type Questions:

1. Why is a lever used to lift heavy things?

Answer- Lever is used to lift heavy things because it enables one to apply less effort than the weight of the load.

2. How does a knife act as a wedge?

Answer- A knife acts as a wedge, as it has two inclined planes joined to form a sharp edge. It is used to cut objects.

3. Why is a screw not as smooth as a nail?

Answer- A Screw is not as smooth as a nail, because it has winding edges called threads which helps to hold things tightly together.

4. What is a wheel and axle?

Answer- Wheel and axle together form a simple machine. This arrangement helps to turn or move something across a surface more easily and with less effort

5. Slides for children in the park are an example of which simple machine?

Answer- Slide is an example of inclined plane.

C. Long Answer Type Questions :

1. What is the principle applied in drawing water from a well?

Answer- A pulley is used to draw water from a well by changing the direction of force. The pot of water is pulled upward by putting the rope downward.

2. How can a screw Jack lift a heavy truck easily?

Answer- A screw jack works on the principle of screw. The slope of the Jack helps lift heavy things like cars and trucks easily.

3. Why is it easy to use an inclined plane while moving a load to a

(a) higher level

(b) lower level

Answer- It is easy to use an inclined plane while moving a load to a higher level because the sloping surface reduces the effort required to lift a load.

It is also easy to move a heavy load down the inclined plane as less force is needed. Example- ramp, slide etc.

4. Where is the load, fulcrum and effort in a stapler?

Answer- In a stapler, the effort is between load and fulcrum. In this type of lever, the effort used to lift the load is always greater.

D. Fill in the blanks :

1. A fly over uses the principle of inclined plane.

2. Broom is an example of third class lever.

3. A wheel when combined with axle becomes a simple machine.

4. A pulley is used to hoist a flag.

5. Machine is a device that makes our work easier.

E. State True or False:

1. A bus is a simple machine. [False]

2. Pulley changes the direction of force. The [True]

3. Wheel and axle help to set things in motion. [True]

4. Screw has a winding edge called teeth. [False]

5. Greater load can be moved if there is less distance between effort and fulcrum. [False]

F. Match the columns :

Column A

Column B

1. Lever -

Hammer

2. Inclined plane - Slanted road

3. Wheel and axle - Door knob

4. Wedge - Needle

5. Screw - Pen cap

G. Draw labelled diagrams showing the position of effort, fulcrum and load in a :

(i) fixed pulley -(Diagram is on page no. 71)

(ii) movable pulley-(Diagram is on page no. 72)

H. Puzzle time :

2. What am I?

(a) a sloping surface connecting lower level to a higher level - Inclined plane

(b) A rod can be turned around a fixed point - Lever

(c) Inclined plane wrapped around a rod - Screw

(d) Two inclined planes joined together to form a sharp edge of - Wedge

(e) A small wheel with a groove around its edge - Pulley

