Class: 5 Chapter: 11 (Simple Machines)

A. Tick the correct answer.

1. Which of the following is lever of first order?

b. Scissor

2. Which of the following is a class II lever?

a. Bottle opener

3. Which of the following is not an example of a wedge?

d. Screw driver

4. ___ is a wheel with a grooved rim with a rope.

a. Pulley

B. Define the following.

1. Lever

Answer: A lever is a rigid rod arranged in such a manner that it can move freely around a fixed point. it consists of three parts- fulcrum (F), load(L) and effort(E)

2. Machine

answer: machines are simple devices or tools that make our work easier, faster and better. They reduce our efforts and save time in completing a work. Machines can be simple or complex.

3. Pulley

Answer: a Pulley is a wheel with a grooved rim with a rope that can be used to lift heavy loads.

4. Fulcrum

Answer: Fulcrum is the fixed point around which the rod in a lever moves.

5. Screw

answer: A Screw is an inclined plane wrapped around a cylinder. They are used to hold things together.

C. Write two example of:

1. **Lever of first order**- Scissors, See-saw
2. **Lever of second order**- Bottle opener, Nut cracker
3. **Wedge**- Axe, Knife

D. Answer the following questions:

1. Write the difference between simple and complex machines.

Answer: The machines that are simple and do not have many working parts are called simple machines. example- spoon, fork.

Complex machines are a combination of two or more simple machines and have working parts. example- clock, washing machine.

2. Discuss the types of levers with suitable examples.

Answer: on the basis of the position of fulcrum, load and effort ,there are three types of lever.

a. Lever of first order has fulcrum located in between the load and the effort. example- a pair of scissors, see-saw.

b. Lever of second order has load located in between the fulcrum and the effort. example- bottle opener, nut cracker.

c. Lever of third order has effort located in between the fulcrum and the load. example- a fishing rod, broom.

3. What is an inclined plane? give two examples.

Answer: an inclined plane is a simple machine having a flat surface in which one end is higher than other. example- staircase, slide.

4. For what purpose do we use a wheel and axle arrangement? give an example.

Answer: A wheel and an axle together make a simple machine. it can be used to lift a heavy load by applying a small effort.

example- bicycle wheel.

5. What is a wedge? give two examples.

Answer: a wedge is a combination of two inclined planes forming a triangle. example- knives and axes.

6. What are the uses of a pulley?

Answer: Pulleys can be used for different purposes. a single fixed Pulley is used to draw water from wells, raise or lower flags and to draw curtains. A movable pulley is used to lift heavy loads.

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