

Subject - Physics

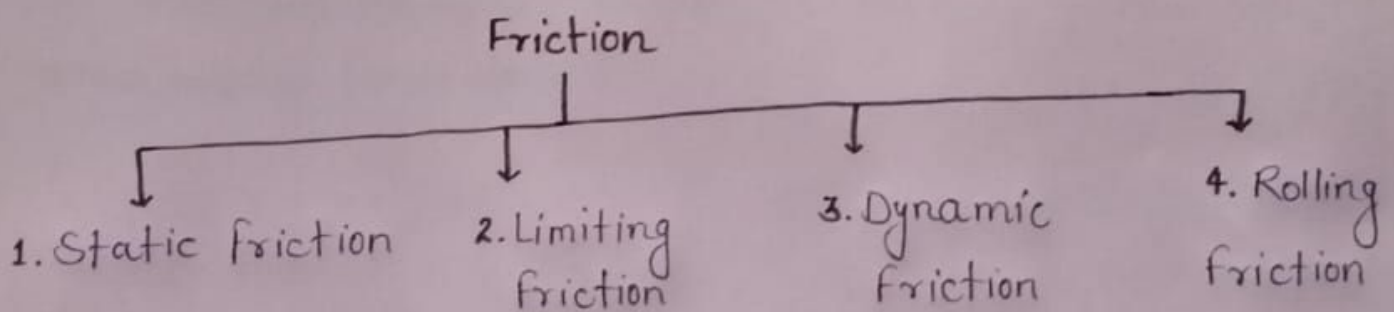
Friction :- When two surfaces rub against each other, they produce a force called friction.

Ex- Brakes use friction to slow down a moving wheel.

Note :- Friction is the force that opposes motion.

Characteristics of frictional force :-

1. It comes into action only when the moving body moves in contact with another body.
2. It always opposes the motion of the body and tries to bring it to rest.
3. It causes wear and tear of the surface of contact of the two bodies.



1. Static friction :- It can be defined as the friction that works between two surfaces in contact when there is no relative motion between them.

2. **Limiting friction** :- It can be defined as the maximum value of force required to make the body just to slide.
3. **Dynamic friction** :- Dynamic friction is defined as the friction that exist between a body surface sliding on another surface.
4. **Rolling friction** :- It can be defined as the friction exerted on a body when it is made to move over rolling object or wheels.

Advantages of friction :-

1. We can walk easily on a road or surface.
2. We are able to ride cycle or by bicycle.

Disadvantage of friction :-

1. Friction causes wastage of energy.
2. Friction produces heat.
3. Friction causes wear and tear.

◆ Minimizing Friction :-

1. Friction can be minimized by polishing the surface.
2. By using lubrication.
3. By using compressed air
4. By Designing stream line shape of body.
5. By using wheels and bearings.

Increasing Friction:-

Friction can be increased by - making the surface rough -

1. Soles of shoes and slippers have grooves.
2. Tyres of vehicles have grooves.
3. Wet ground which is covered by sand.

Questions

A. Choose the most appropriate answer:

1. Frictional force increases with the increase in -
(a) Roughness of the surface
(b) Smoothness of the surface
(c) Distance between two bodies
(d) None of above
2. Frictional force is due to between two moving surfaces
(a) Softness (b) roughness
(c) distance (d) None of the above
3. Rolling friction is always more than -
(a) Dynamic friction (b) Static friction
(c) limiting friction (d) None of the above

B. Answer the following questions in short -

Que 1. Why do you spread talcum powder on a caromboard?

Que 2. Why it is tough to walk on a wet ground?

Que 3. Why are small wheels attached to the surfaces, bags etc.?

Que 4. Why do tyres of vehicles have grooves on them?

Que 5. Why it is tough to write on a very smooth paper?