

## Chapter 3: Force

### Worksheet 1

#### 1. Write T for true and F for false statement.

- (i) Force is a push or a pull which changes or tends to change the state of rest or of uniform motion of an object.
- (ii) Friction can be increased by lubricating the two surfaces in contact.
- (iii) Friction produces heat.
- (iv) The magnitude of sliding friction is more than static friction.
- (v) Rolling friction is the frictional force exerted by a surface on an object rolling over it.

#### 2. Fill in the blanks.

- (i) While pulling a hand cart, a man applies \_\_\_\_\_ force.
- (ii) The frictional force opposes \_\_\_\_\_ of one object over the surface of other object.
- (iii) The amount of \_\_\_\_\_ force depends on the roughness of two surfaces in contact.
- (iv) People can tie a knot due to \_\_\_\_\_.
- (v) Friction is a necessary \_\_\_\_\_.

#### 3. Encircle the odd one out.

- (i) Kick, hit, sit and throw
- (ii) Gravitational force, mechanical force, magnetic force and electrostatic force
- (iii) Lubricant, ball bearing, grooved tyres and talcum powder
- (iv) Static friction, sliding friction, rolling friction and motion
- (v) Length, mass, time and newton

#### 4. Answer the following questions.

- (i) Write two examples of pulling force.
- (ii) Mention one method to reduce friction.
- (iii) Why do heavy vehicles like trucks and trawlers have many wheels?
- (iv) Define resultant force.
- (v) Is muscular force contact force?

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### Worksheet 2

#### 1. Tick the correct answer.

- (i) The SI unit of force is  
(a) joule                      (b) newton                      (c) erg                      (d) coulomb
- (ii) Friction can be reduced by using  
(a) Lubricants                      (b) Ball bearings  
(c) Streamlined shape                      (d) All of them
- (iii) Which one of these is contact force?  
(a) Magnetic force                      (b) Electrostatic force  
(c) Gravitational force                      (d) Mechanical force
- (iv) Which one of the following is incorrect?  
(a) Friction opposes motion.  
(b) Friction produces heat.  
(c) Friction causes wear and tear.  
(d) No building can be constructed in the presence of friction.
- (v) The maximum value of static friction acting on an object when the object is just on the verge to start sliding is called  
(a) Limiting friction                      (b) Static friction  
(c) Sliding friction                      (d) Rolling friction

#### 2. Fill in the blanks.

- (i) Furniture is polished so as to \_\_\_\_\_ friction.
- (ii) Our shoes and tyres of vehicles wear out due to \_\_\_\_\_.
- (iii) The magnitude of rolling friction is much less as compared to \_\_\_\_\_ friction.
- (iv) Force that acts between two objects, which are not in actual physical contact, is called \_\_\_\_\_ force.
- (v) Force of friction \_\_\_\_\_ on increasing the mass of an object.

#### 3. Give reason for the following.

- (i) The shape of ships is streamlined.
- (ii) Wide concrete sleepers are fixed under a railway track.

- (iii) The soles of sports shoes have spikes.
- (iv) We can write on paper easily using our pencil.
- (v) The talcum powder is used on carom board.

**4. Answer the following questions.**

- (i) Define force.
- (ii) What is the importance of friction to us?
- (iii) Why do industrial belts have rough surfaces?
- (iv) If two forces of 10 N and 20 N are applied on an object in opposite direction, find the resultant force.
- (v) Why is friction a necessary evil?