

DR. M.K.K. ARYA MODEL SCHOOL
CHAPTER-12(FRICTION)
ASSIGNMENT

ONE MARK QUESTIONS

1. What is friction?

Ans. It is an opposing force that comes into play when one body actually moves or even tries to move over the surface of another body.

2. In which direction does the frictional force act?

Ans. Friction acts in a direction opposite to applied force.

3. On which thing does friction depend?

Ans. Friction depends on nature of surfaces (rough or smooth) in contact.

4. What is static friction?

Ans. It is an opposing force that comes into play when one body tends to move over the surface of another body but the actual motion has yet not started.

5. Why do we easily slip on a rainy day?

Ans. Water acts as lubricants which reduces the friction between the roads and our feet.

6. What are lubricants? Write some examples.

Ans. The substances which reduce friction are called lubricants. Examples of lubricants- oil, grease or graphite etc.

7. What is drag?

Ans. The frictional force exerted by fluids {liquid or gas} is also called drag.

8. The fast moving vehicle are given streamline shape. Why?

Ans. This reduces the force of friction due to air.

9. Kabaddi players rub their hands with soil. Why?

Ans. Kabaddi players rub their hands with soil to increase friction for a better grip.

TWO MARKS QUESTION

1. What is the cause of friction?

Ans. Friction is caused by the irregularities on the two surfaces in contact. Irregularities on two surfaces lock into one another. One has to apply force to overcome into one another.

2. Sand is spread on tracks covered with snow. Why ?

Ans. Sand is spread to increase the friction between the roads and the wheels. Therefore, chances of slipping and skidding reduce.

3. Whenever we step on banana peel then why is it difficult to maintain the balance of body?

Ans. Due to less friction between the banana peel and the surface of earth , it is difficult to maintain the balance of our body. Therefore we slip.

4. Why oil or grease is poured in the hinges of doors?

Ans. Oil or grease is poured in the hinges of doors because by doing so friction decreases and motion of doors becomes smooth.

5. How do we save petrol when the tyres of motor cycle are fully inflated ?

Ans. When the tyres are fully inflated , deformation of tyres will be small. As a result, rolling friction will reduce and motorcycle will cover more distance for the given petrol consumed in it. Hence we save petrol when the tyres of motorcycle are fully inflated.

6. Why are wheels of an automobile made circular ?

Ans. Circular wheels roll on the road. Therefore motion of the vehicle is opposed by rolling friction which is smaller than the sliding friction.

7. Why are ball bearings used in machinery ?

Ans. By using ball bearing between the moving parts of a machinery , the sliding friction is converted into rolling friction. As rolling friction is much less than sliding friction , loss of energy is reduced.

8. On which things does drag (fluid friction) depend?

Ans. Fluid friction depends upon

1. Speed of an object
2. Shape of the object
3. Nature of the fluid

THREE MARKS QUESTION

1. Differentiate between Sliding friction and Rolling friction. Magnitude of which is smaller?

Ans. Sliding friction – The opposing force that comes into play when one body is actually sliding over the surface of another body is called sliding friction.

Rolling friction – The opposing force that comes into play when one body is actually rolling over the surface of another body is called rolling friction.

The rolling friction is smaller than the sliding friction

2. Discuss the methods of increasing and reducing friction.

Ans. The methods of increasing friction-

1. Sand is spread on tracks covered with snow to increase the friction between wheels and tyres for safe driving
2. Tyres of vehicles are treaded to increase friction.
3. Soles of shoes are grooved to increase friction.

The methods of reducing friction-

1. Oils and lubricants reduce the friction between two surfaces.
2. Use of ball bearings can also reduce the friction.
3. Specific shapes (streamline) are given to vehicles to reduce the friction.

3 . Friction is a necessary evil. Comment.

Ans. Friction is a necessary evil because it has advantages as well as disadvantages.

The advantages of friction are as follows-

1. Walking would not be possible without friction.
2. Writing on blackboard or paper would not be possible without friction.
3. Adhesives would lose their purpose without friction.
4. Brakes of vehicle would not work without friction

The disadvantages of friction are as follows-

1. Friction always opposes the relative motion between the two surfaces in contact.
2. The shoes and tyres get wear out due to friction.
3. The machine parts get damaged due to friction.
4. Friction results in the production of heat which lowers the efficiency of machinery.