Friction

Very Short Answer Type Questions

Question 1.
Name the force which always opposes motion.
Answer:
The friction always opposes the motion.

Question 2.
Why does a fast car slow down if its engine is switched off?
Answer:
When the engine of a car is switched off, then there is no energy available for the engine to oppose the frictional forces. Thus, the engine slows down and eventually comes to rest.

Question 3.
Which type of surfaces produce
(a) least friction, and
(b) too much friction?
Answer:
(a) Smooth surfaces offer least friction.
(b) Rough surfaces offer high friction.

Question 4.
What is the direction of force of friction acting on a moving object ?
Answer:
The friction forces always act in the opposite direction of motion.

Question 5.
Name a device which is used to measure force acting on an object.
Answer:
Dynamometer is used to measure the forces acting on any object.

Question 6.
What is a spring balance?
Answer:
A spring balance is used to measure the weights of object with the help of tension force.

Question 7.
Out of sliding friction, static friction and rolling friction:
(a) which one is the smallest?
(b) which one is the largest?
Answer:
(a) Rolling friction is the smallest in magnitude.
(b) Static friction is the largest in magnitude.

Question 8.
Which type of friction comes into play when a book kept on cylindrical pencils is moved by pushing?
Answer:
Rolling friction comes into play when a book kept on cylindrical pencils is moved by pushing.

Question 9.
Why is it more difficult to walk properly on a well-polished floor?
Answer:
The well-polished floor offers very less resistance. Therefore, the shoes slip on it and its very difficult to walk properly.

Question 10.
Why is it difficult to walk on a wet marble floor?
Answer:
It is very difficult to walk on a wet floor because the friction is less and the required grip cannot be maintained.

Question 11.
Which force is responsible for the wearing out of car tyres?
Answer:
Frictional force is responsible the wearing of car tyres.

Question 12.
What prevents you from slipping every time you take a step forward?
Answer:
Frictional forces prevent us from slipping every time you take a step forward.

Question 13.
Name the force which helps things to move and stop.
Answer:
Frictional forces helps things to move and stop.

Question 14.
What enables us to fix nails in a wall and knots to be tied?
Answer:
Friction enables us to fix nails in a wall and knots to be tied.

Question 15.
What makes the steps of foot over-bridges at Railway Stations to wear out slowly ?
Answer:
Frictional force is responsible the wearing of footsteps of over-bridges.

Question 16.
What is done to increase friction between the tyres and road?
Answer:
The tyre's surface has treads on it. Treads improve the grip of the tyre on the road.

Question 17.
Why do gymnasts apply a coarse substance to their hands?
Answer:
Gymnasts apply a coarse substance to their hands to increase the frictional forces on their hands so that they can hold firmly.

Question 18.
Why do kabaddi players rub their hands with dry soil?
Answer:
Kabaddi players rub their hands with dry soil before playing so as to increase friction. This enables them to grip the other player's hand properly.

Question 19.
Name the device which is used between the hubs and axles of bicycle wheels to reduce friction.
Answer:
Ball bearing is used between the hubs and axles of bicycle wheels to reduce friction.

Question 20.
What is the purpose of using ball bearings in machines?
Answer:
Ball bearing reduce friction between the support loads and axles of a vehicle.

Question 21.
Name any two machines in which ball bearings are used.
Answer:
Car and bicycle.

Question 22.
Name the device which is attached to heavy luggage (such as a heavy suitcase) to move it easily by pulling.
Answer:
Pulley.

Question 23.
Name one example from everyday life where wheels (or rollers) are used to reduce friction.
Answer:
Car

Question 24.
Why does oiling the axles of a bicycle make the bicycle move more easily?
Answer:
Oiling the-axles of a bicycle reduces the friction and thus the bicycle moves easily.

Question 25.
State one way in which the friction between the wheel and its axle can be reduced.
Answer:
The ball bearing help in reducing the friction between the wheels and its axle.

Question 26.
Name two common lubricants.
Answer:
Castor oil and Grease are the two common lubricants.
Note: A lubricant is a substance that smoothens a surface. It decreases the friction of a surface.

Question 27.
Why do we sprinkle fine powder on carrom board?
Answer:
Sprinkling fine powder on carrom board reduces friction between carom and striker.

Question 28.
Which force gets reduced when the two surfaces in contact are polished to make them smooth?
Answer:
Frictional force gets reduced when the two surfaces in contact are polished to make them smooth.

Question 29.
Why is the surface of a slide polished to make it smooth?
Answer:
The surface of a slide polished to make it smooth in order to reduce friction.

Question 30.
Name the force which increases when the two surfaces in contact are made more rough.
Answer:
Frictional force increases when the two surfaces in contact are made more rough.

Question 31.
What is the special name of frictional force exerted by fluids (like air or water)?
Answer:
Drag is the special name of frictional force exerted by fluids.

Question 32.
What is the name of 'special shape' which is given to objects moving through air (or water) to reduce drag?
Answer:
The special shape is more like a point shaped so that they cut the fluid friction.

Question 33.
Why are grooves provided in the soles of shoes?
Answer:
Grooves in the soles of shoes help in increasing the friction when we walk on the roads. The grooves in the shoe sole help in maintaining a grip with the ground.

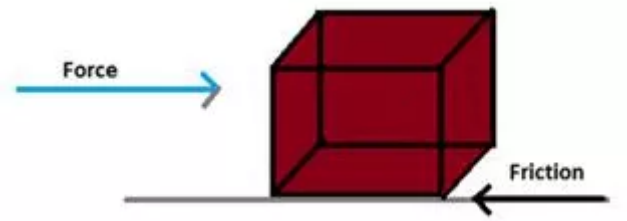
Question 34.
Why are treads made in the surface of tyres?
Answer:
Treads are made on the surface of tyres help in increasing the friction. These treads help in

maintaining a firm grip on the road which reduces the risk of slipping on the road thus avoiding accidents.

Question 35.
Fill in the following blanks with suitable words :
(a) Friction always opposes……..between the surfaces in contact with each other.
(b) Sliding friction is ……..than the static friction.
(c) Friction produces…….
(d) Friction prevents our foot from……..over the ground.
(e) Sprinkling of powder on the carom board……friction.
(f) Ball bearings reduce friction because they……rather than 'slide.
(g) The friction when something moves through a liquid or gas is called……
(h) Cars and speedboats are……..to reduce drag.
(i) Shapes that are designed to reduce air resistance are called……shapes.
(j) Objects which can move quickly through the water have a ……shape.
(k) The shape of an aeroplane is similar to that of a……in flight.
Answer:
(a) Friction always opposes motion between the surfaces in contact with each other
(b) Sliding friction is less than the static friction.
(c) Friction produces heat
(d) Friction prevents our foot from slipping over the ground
(e) Sprinkling of powder on the carom board reduces friction.
(f) Ball bearings reduce friction because they roll rather than 'slide.
(g) The friction when something moves through a liquid or gas is called drag.
(h) Cars and speedboats are streamlined to reduce drag.
(i) Shapes that are designed to reduce air resistance are called streamlined shapes.
(j) Objects which can move quickly through the water have a streamlined shape.
(k) The shape of an aeroplane is similar to that of a bird in flight.

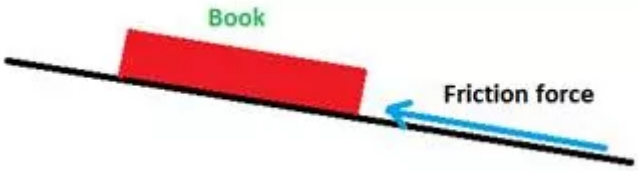
Short Answer Type Questions

Question 36.
When we try to push a very heavy box kept on ground, it does not move at all. Which force is preventing this box to move forward? Where does this force act?
Answer:
Whenever we push a very heavy box kept on the ground, it does not move at all because frictional force balances the force that we apply. So, there is no net movement of this box. It acts in a direction opposite to the force we apply.



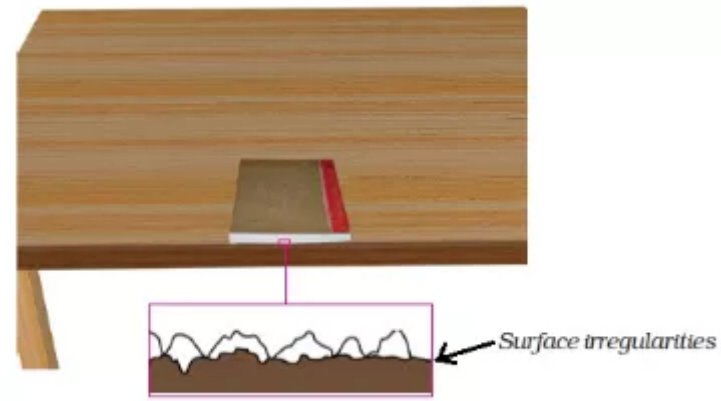
Question 37.
Suppose your writing table (or desk) is tilted a little. A book kept on the table starts sliding down. Draw a diagram to show the direction of force of friction acting on the book.

Answer:



Question 38.
Which will cause more friction: a rough surface or a smooth surface? Why?
Answer:
A rough surface will cause more friction than a smooth surface. Because, rough offers more resistance to the other surface in contact as compared to the smooth surface.

Question 39.
Explain why sliding friction is less than static friction.
Answer:
The sliding friction is less than static friction because, in sliding friction, the interlinking of the two surfaces is for very short time.
Friction mainly arises due to the interlocking of irregularities between two surfaces, as shown below in the diagram:

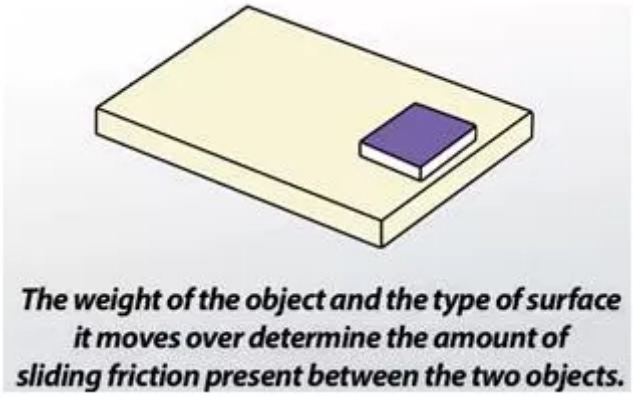


In smooth surfaces, there are very fewer irregularities, thus friction is very very less. But, on rough surfaces, the irregularities are very large.

In sliding friction, the time of interlocking is very less, as one object slides over another object. Whereas, in static friction, one object is moved over another object thus the irregularities time is more. Thus, the two surfaces could not properly come in contact with each other in sliding due to which the magnitude of static friction is more than sliding friction.

Question 40.
What is meant by 'rolling friction'?
Answer:
Rolling friction is the friction or drag which opposes the motion when a body rolls.

Question 41.
Iqbal has to push a lighter box and Seema has to push a similar heavier box on the same floor. Who will have to apply a larger force and why?
Answer:
Seema will have to apply larger force than Iqbal.



The weight of the object and the type of surface it moves over determine the amount of sliding friction present between the two objects.

Because Seema's box is heavier and Seema will have to apply greater force to overcome the larger friction in case of the heavier box.

Question 42.
Why does a man slip when he steps on a banana peel thrown on the road?
Answer:
While walking on the road, a man slips if he steps on a banana peel because the banana peel acts a lubricant between the road and the man's shoe which reduces the friction. Thus, man slips on it.

Question 43.
Car wheels often spin on icy roads. Explain why.
Answer:
A car spins on icy road because the treads of the car can no longer maintain the proper friction to keep it moving. Due to ice, the friction reduces and the car spins.

Question 44.
Explain why:
(a) A pencil will write on paper but not on glass.
(b) climbing a greasy pole is very difficult.
Answer:
(a) A pencil is made up of graphite. The paper surface offers more friction to the pencil when we write on the paper, in this way when the pencil is rubbed on the paper, some bits of graphite come on the paper and we are able to write. But glass offers no friction to the pencil, therefore we can't write on a glass with pencil.

(b) Climbing a greasy pole is very difficult because the greasy pole offers very less friction to the feet of the person climbing on it. Du to which, the person slips down again and again.

Question 45.
Why does a matchstick light when we strike it on a rough surface ?
Answer:
When a matchstick is rubbed on a rough surface, the surface produces friction. And we know friction produces heat, therefore the matchstick lightens up.

Question 46.
Why is it difficult to light a matchstick by striking it on a smooth surface ?
Answer:

The smooth surface offers very less friction, due to which very less heat is produced by it and it is not sufficient to lighten up the matchstick.

Question 47.
Which parts wear away first in shoes? Give a reason for your answer.
Answer:
The heels of the shoes get wear and tear first than the rest of the shoe sole. This is because, the heel of the shoe is interacted with the ground more than the other part and due to friction, the treads of the shoe sole wear out.

Question 48.
Why do brake pads of bicycles have to be replaced quite often?
Answer:
The brake pads of bicycles have to be replaced quite often because they gather more dirt, dust and the filthy matter on itself. So to allow proper functioning, they have to be replaced.

Question 49.
A pencil eraser loses tiny pieces of rubber each time you use it. Why does this happen ?
Answer:
This is because the paper surface offers more friction to the pencil rubber when we rub on the paper, some bits of rubber come on the paper.

Question 50.
What happens when you rub your hands vigorously for a few seconds ? Why does this happen ?
Answer:
By rubbing our hands against each other we create friction between our hands and this friction produces heat. Therefore, out hands become warm.

Question 51.
Explain how, friction enables us to walk without slipping.
Answer:
When step forward and walk, we are applying force (denoted by “F”) on the ground. Now, in return ground also applies the reaction force to us. But we can fall if friction (denoted by “f”) is not present as the large ground can apply a large force . This is explained in the diagram:

Question 52.
Which is easier to hold in hand: a kulhar (earthen pot) or a glass tumbler? Why?
Answer:
It is easier to hold a kulhar (an earthen pot) because it more rough surface as it is made from mud. Mud offers more friction than glass and we are able to from a grip on the earthen plot.

Question 53.
How does a bicycle stop when its brakes are applied ?
Answer:
When we apply brake sot the bicycle, a force of friction generates between the rim of the bicycle and the brakes. The friction is produced in opposite direction of motion. Thus, the bicycle is stopped.

Question 54.
Explain why, the soles of our shoes wear out gradually.
Answer:
The shoes rub on the ground while walking. The ground offers friction due to which the sole of shoes wear and tear out.

Question 55.
Why do tyres of cars wear out gradually ?
Answer:
The tyres of the car wear out due to friction produced between he tyres and the car when a car is moving.

Question 56.
State two advantages and two disadvantages of friction.
Answer:
Disadvantages of Friction:

1. Friction always opposes he motion.
2. Friction causes wearing and tearing.

Advantages of Friction:

1. Friction help us to walk.
2. A horse can't pull a cart without friction.

Question 57.
Explain why, sportsmen use shoes with spikes.
Answer:
The sports people use shoes with spikes, spikes increase the friction with the ground and does not let the person slip or fall when running fast.

Question 58.
How will you reduce friction between those machine parts which rub against each other? Give the simplest method.
Answer:
By applying any lubricant , say grease, one can reduce friction between those machine parts which rub against each other to avoid wear and tear.

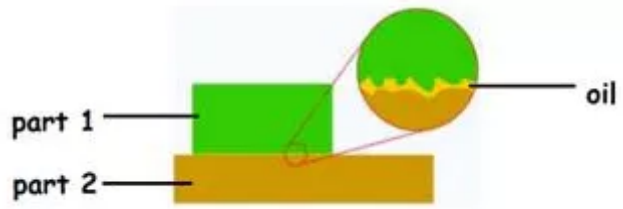
Question 59.
What is meant by lubrication ? Why is it important?
Answer:

Lubrication means applying some additive to the parts of a machine to reduce the friction. Its important because it reduces the friction between the parts of the machine. But excess lubrication can generate more heat.
Example- Castor Oil, Grease.

Question 60.
Explain why, wheels are so useful.
Answer:
Wheels are important because they are used for transportation. Heavy machines can be moved from one place to another with the help of wheels because wheels can be rolled and the amount of force is also comparatively less.

Question 61.
Why are lubricants (oil or grease) applied to rubbing surfaces of machines?
Answer:
Lubricants (oil or grease) are applied to rubbing surfaces of machines because when the parts rub against each other, heat is produced. To avoid the wearing and tearing of the machine parts, lubrication is done. Because it reduces the friction and thus less heat is produced.

Question 62.
Explain with the help of diagrams, how the use of oil reduces friction between two surfaces in contact with each other.
Answer:
If we oil between the two surfaces, say part1 and part 2 of a machine, then the oil layer will allow less contact of the two surfaces with each other as you can see in the figure below:



In this way, the friction between the two surfaces is decreased.

Question 63.
Why are cars, aeroplanes and rockets streamlined ?
Answer:
The cars, aeroplanes and rockets are streamlined so as to reduce the fluid friction. The air drag obstructs the vehicle to move forward and the fuel is consumed mainly for opposing this opposite frictional force. Therefore, the objects are given special shape called streamline shape, which itself cuts the air friction.s

Question 64.
Explain why, a speedboat has a streamlined shape.
Answer:
A speedboat has a streamlined shape so as to reduce the fluid friction as it moves in the waters.

Question 65.
What are fluids? Name two common fluids.
Answer:
Fluids are those whose which do not have any shape and flow like liquids. Example- Air and Blood.

Long Answer Type Questions

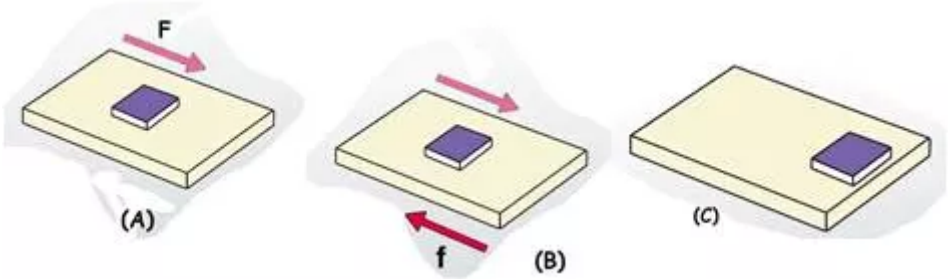
Question 66 A.
Define friction. What are the factors affecting friction? Explain with examples.
Answer:
The force that opposes the motion of an object is called friction. Example, when we walk, friction acts in opposite direction we apply force to walk.

The factor affecting friction are:

1. The weight of the object.
2. The type of contact between the two surfaces.

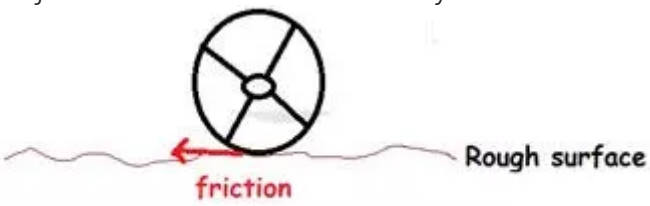
Question 66 B.
What is the cause of friction? Explain with the help of a labelled diagram.
Answer:
The cause of friction is surface roughness and adhesion.

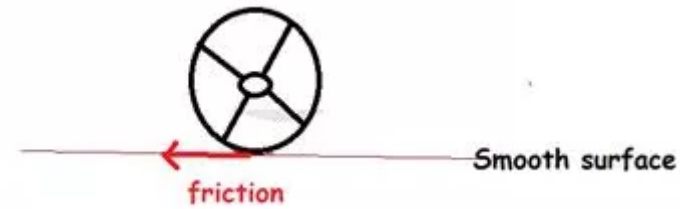
When we apply force, F on a book, the book slide (Fig A). Then acts a force of friction, f (Fig B)



The friction is produced due to the contact of the two surfaces of the table and the book. It acts in opposite direction of the force to stop it. And, we see after some distance, the book again comes to the rest (Fig C).

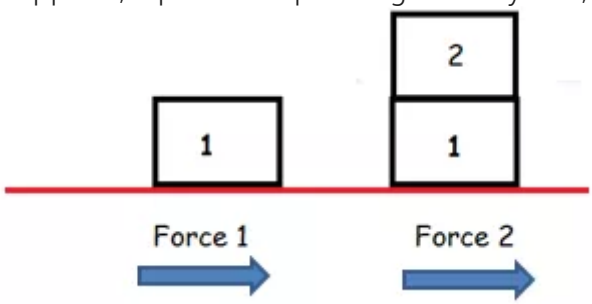
Question 67 A.
Give examples to show that friction depends on the nature of two surfaces in contact.
Answer:
The friction depends on the roughness as well as smoothness of the surface. If the surface is rough, then the surfaces in contact have more interlockings and the thus the friction is more. Thus, the object is not able to move easily due to more friction.





If the surface is smooth, then the surfaces in contact have very less interlockings and the thus the friction is less. Thus, the object is able to move easily due to less friction.

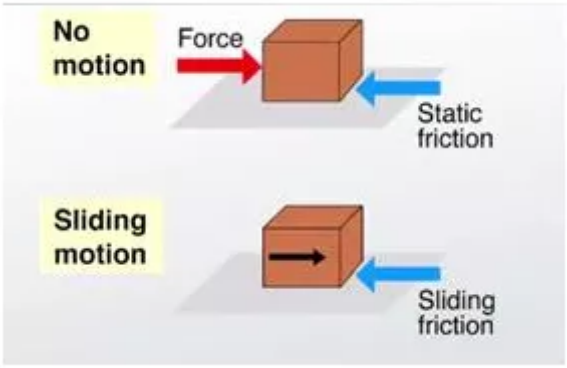
Question 67 B.
Give an example to show that friction depends on the force with which the two surfaces are pressed together.
Answer:
Suppose, a person is pushing a heavy box, then he is applying say force F1.



Now if the same person pushes two boxes of same mass as the previous case. Then, in this case he will have to apply more force to overcome the larger friction as in the earlier case. Thus is because friction depends on the mass of the object. Heavier the mass, more the force is exerted by the object on the surface and thus more friction is produced.

Question 68 A.
What is the difference between static friction and sliding friction? For' a given pair of objects, which of the two is greater?
Answer:
When the body is in stationary state or is at rest, the frictional forces acting on the body is known as static frictional forces.

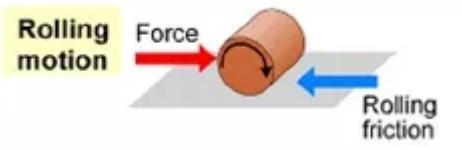
But when the object is pushed and it moves, the friction that comes into action is sliding friction.



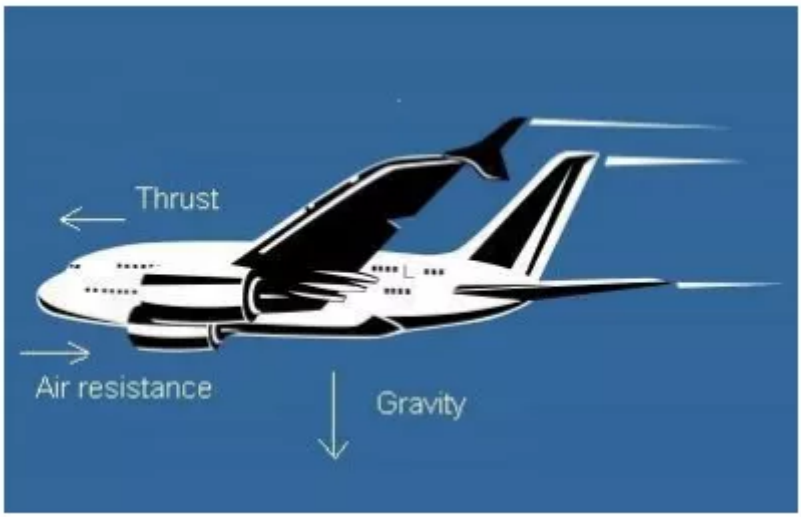
The static friciton is greater than sliding friction because more force is required to remove the objectf rom rest state into dynamic state. Once the obejct comes into motion, it is easier to keep the object moving by applying comparetively lesser force.

Question 68 B.
How can a very heavy machine be moved conveniently from one place to another in a factory? (No crane is available for this purpose).
Answer:
A very heavy machine can be moved from one place to another with the help of wheels. Because then rolling friction comes into action and its value is the least among static and sliding friction.

The following diagram shows, how a heavy cylinder can be rolled easily.



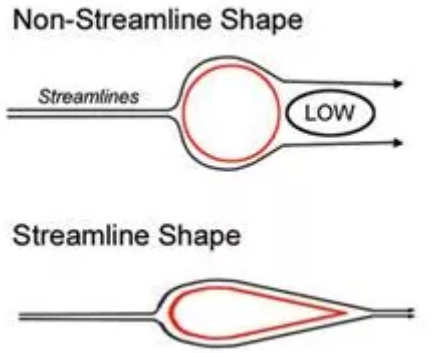
Question 69 A.
What is drag? Give two examples of a drag force.
Answer:
The drag is the other name for fluid friction. It resists the motion of any object that travels in fluid.



Examples: 1. A boat travelling in water.
2. An aeroplane moving in the sky.

Question 69 B.
How can you reduce the drag on something moving through the air?
Answer:
The objects are built in special streamline shape to reduce the drag while moving in the air. Example, birds and Aeroplane have streamlined shapes.

Question 70 A.
What is meant by 'streamlined shape'? Name an object which usually has a streamlined shape.
Answer:
A streamline shape is the one in which the body is pointed at the ends and broad-shaped in the middle.



Example : Speedboat has streamlined shape.

Question 70 B.
Explain why, objects moving in fluids should have streamlined shape.
Answer:
The objects moving in fluids have streamlined shape so as to reduce the air drag or fluid friction that opposes their motion in any fluid.

Multiple Choice Questions (MCQs)

Question 71.
A boy runs his toy car on dry marble floor, wet marble floor, newspaper and towel spread on the floor. The force of friction acting on the car on different surfaces in increasing order will be :
A. Wet marble floor, Dry marble floor, Newspaper, Towel
B. Newspaper, Towel, Dry marble floor, Wet marble floor
C. Towel, Newspaper, Dry marble floor, Wet marble floor
D. Wet marble floor, Dry marble floor, Towel, Newspaper
Answer:
A. Wet marble floor, Dry marble floor, Newspaper, Towel
As the roughness of the surface increases, the friction force increases.

Question 72.
Four children were asked to arrange forces due to rolling, static and sliding frictions in a decreasing order. The correct arrangement is :
A. Rolling, Static, Sliding
B. Rolling, Sliding, Static
C. Static, Sliding, Rolling
D. Sliding, Static, Rolling
Answer:

C. Static, Sliding, Rolling
The static friction > Sliding Friction > Rolling friction.

Question 73.
A big wooden box is being pushed on the ground from east to west direction. The force of friction due to ground will act on this box towards:
A. north direction
B. south direction
C. east direction
D. west direction
Answer:
D. west direction
The force of friction acts opposite to the direction of motion.

Question 74.
A spring balance can be used to measure
A) Mass of an object
B) Force acting on an object
C) Density of an object
D) Weight of an object
A. A and B
B. Band C
C. B and D
D. only D
Answer:
C. B and D
A spring balance can measure both the force acting on it as well as the weight of the object.

Question 75.
The friction between two surfaces does not depend on one of the following. This one is:
A. amount of surface area of the two objects which is in contact with each other
B. weight of the object which tends to move on the surface of other object
C. degree of smoothness of surfaces of two objects in contact with each other
D. degree of roughness of surfaces of two objects in contact with each other
Answer:
A. amount of surface area of the two objects which is in contact with each other
Friction does not depend on the area of contact.

Question 76.
If the sliding friction between two surfaces is found to be 8 N, then the static friction between these two surfaces is most likely to be:
A. 5 N
B. 10 N
C. 4 N
D. 2 N
Answer:
B. 10 N
The static friction is always greater than sliding friction.

Question 77.
Which of the following is not an advantage of friction?
A. it enables drawing to be made on paper
B. it enables fallen things to be picked up
C. it enables rubber pads to be rubbed off
D. it enables vehicles to move on ground
Answer:
C. it enables rubber pads to be rubbed off
Friction does wear and tear of the objects.

Question 78.
Which of the following statements is incorrect ?
A. static friction is greater than rolling friction
B. sliding friction is less than rolling friction
C. rolling friction is less than static friction
D. static friction is greater than sliding friction
Answer:
D. static friction is greater than sliding friction
The static friction > Sliding Friction > Rolling friction.

Question 79.
If the static friction between two surfaces X and Y is found to be 20 N, then the rolling friction between these two surfaces should most likely be :
A. 25 N
B. 20 N
C. 5 N
D. 50 N
Answer:
C. 5 N
The relationship between the three types of friction is:
The static friction > Sliding Friction > Rolling friction Thus the rolling friction will be less than 20N

Question 80.
If the static friction between two surfaces P and Q is measured to be 50 N, then the sliding friction between these two surfaces is most likely to be :
A. 75N
B. 45N
C. 55N
D. 65N
Answer:
B. 45N
The static friction > Sliding Friction > Rolling friction.

Question 81.
Which of the following will produce the maximum friction?
A. rubbing of sand paper on glazed paper
B. rubbing of sand paper on glass table top
C. rubbing of sand paper on aluminium frame

D. rubbing of sand paper on sand paper
Answer:
A. rubbing of sand paper on glazed paper
As the roughness of the surface increases, the friction increases.

Question 82.
Four similar cars having exactly the same mass are running at the same speed on the same road when brakes are applied at the same time. The cars come to a stop after covering distances of 5 m, 5.5 m, 4.8 m and 5.2 m respectively. The friction between the brake pads and discs will be the maximum in the car which travels the distance of:
A. 5 m
B. 5.5 m
C. 4.8 m
D. 5.2 m
Answer:
C. 4.8 m
As the distance travelled is the least in 4.8 m , thus friction would have been the largest.

Question 83.
The weight of an object can be measured by a:
A. beam balance
B. analytical balance
C. spring balance
D. physical balance
Answer:
C. spring balance
The spring balance measures weight of an object.

Question 84.
A book is lying on the horizontal table top. If we tilt the table a little, then the book starts sliding down slowly. This happens because:
A. sliding friction is greater than static friction
B. sliding friction is less than force of gravity
C. static friction is greater than sliding friction
D. force of gravity is less than sliding friction
Answer:
B. sliding friction is less than force of gravity
The book starts sliding down slowly sliding slowly, because the sliding friction is less than force of gravity.

Question 85.
A body shape which offers very little resistance to the flow of air (or water) around it is called:
A. trimlined shape
B. steamlined shape
C. streaklined shape
D. streamlined shape
Answer:
D. streamlined shape

A body shape which offers very little resistance to the flow of a fluid around it, is called streamlined shape.

Question 86.
Which of the following should be used to reduce friction on a carrom board?
A. a lubricating oil
B. a dry lubricant
C. a layer of grease
D. a ball bearing
Answer:
B. a dry lubricant
Using talcum powder to reduce the friction on carom board.

Question 87.
Which of the following does not have a streamlined shape?
A. Aeroplane
B. boat
C. bird
D. bus
Answer:
D. bus
Bus is not streamlined shape. It is a cuboid shape.

Question 88.
The frictional force exerted by a fluid is called:
A. brag
B. drab
C. drag
D. tread
Answer:
C. drag
The frictional force exerted by fluids is called drag force.

Question 89.
A person has applied some mustard oil on his hands. Which of the following objects will become most difficult for him to hold in his hand?
A. Earthen cup (kulhar)
B. thermocol tumbler
C. glass tumbler
D. wooden cup
Answer:
C. glass tumbler
Mustard oil reduces the friction on his hands. So, Glass tumbler will be most difficult to handle.

Question 90.
Ball bearing is a device which usually converts:
A. rolling friction into sliding friction
B. static friction into sliding friction

C. sliding friction into rolling friction
D. rolling friction into static friction
Answer:
C. sliding friction into rolling friction
Because rolling friction allows to move heavier objects from one place to other easily.

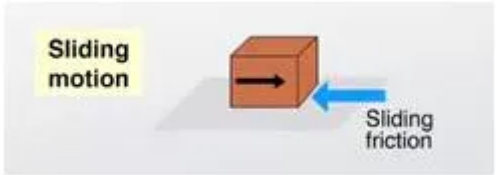
Questions Based on High Order Thinking Skills (HOTS)

Question 91.
When a pencil cell is released from a certain point on an inclined wooden board, it travels a distance of 35 cm on floor A before it comes to rest. When the same pencil cell is released from the same point on the same inclined board, it travels a distance of 20 cm on floor B before coming to rest. Which floor, A or B, offers greater friction? Give reason for your answer.
Answer:
Floor B offers greater friction because it stops the moving pencil cell stop at a lesser distance of 20 cm on the floor. More the friction, more the surface is rough.

Question 92.
A car is moving towards North. What will be the direction of force of friction acting on this car due to surface of road ?
Answer:
The direction of force of friction acting on this car due to surface of road is along the south direction i.e. opposite to the direction of motion.

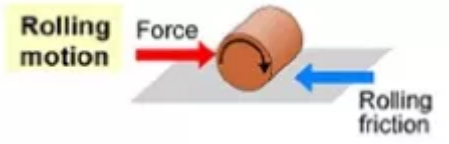
Question 93.
You spill a bucket of soapy water on a marble floor accidently. Would it make easier or more difficult for you to walk on the floor? Why?
Answer:
It will make more difficult to walk on the floor. As soapy solution decreases the friction on the floor.

Question 94.
What kind of friction comes into play:
(a) when a block of wood kept on table moves slowly ?
(b) when a block of wood kept on table just tends to move (or slip)?
(c) when a block of wood kept on cylindrical iron rods moves?
Answer:
(a) Sliding friction



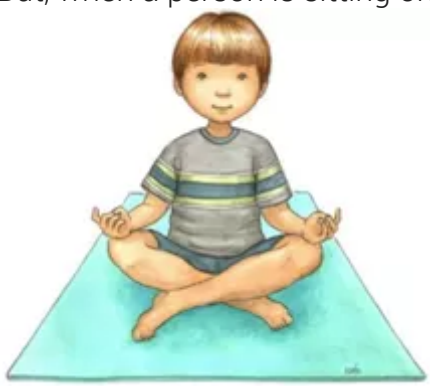
(b) Static friction

(c) Rolling friction



Question 95.
Explain why, it is easier to drag a mat on floor when nobody is sitting on it but much more difficult to drag the same mat when a person is sitting on it.
Answer:
When no person is sitting on the mat, then the mat and floor are not pressed together.

Thus, there is no friction.
But, when a person is sitting on the mat.



Then due to the weight of the person, the mat and floor are pressed together harder, increasing the friction too much. Thus, then it is very difficult to drag the person.