KINETICS
We Nurture The Future
IIT-JEE | Medical | Foundations

Friction

Question 1.
The hinges of creaking doors are oiled to:
(a) keep them clean
(b) open and close them easily
(c) reduce noise and wears and tear
(d) none of these

▼ Answer

(c) reduce noise and wears and tear
The hinges of creakingly doors are oiled to reduce noise and wear and tear.

Question 2.
A matchstick catches fire when struck against the side of the matchbox because:
(a) of the chemicals
(b) of friction
(c) friction produces a spark and the
(d) none of these chemicals catches fire

▼ Answer

(c) friction produces a spark and the
A matchstick catches fire when struck against the side of the matchbox because friction produces a spark and the chemicals catches fire.

Question 3.
Which of the following is true about friction:
(a) Friction can only slow things down
(b) Friction is a force that only occurs when an object moves
(c) Friction is a force that only occurs on rough surfaces
(d) Friction is a force that occurs only between solids

▼ Answer

(b) Friction is a force that only occurs when an object moves
Friction is a force that only occurs when an object moves.

Question 4.
Talcum powder should not be spilled on the floor of room because:
(a) it will stain the floor
(b) it may cause us to slip and fall
(c) it is messy
(d) none of these

▼ Answer

(b) it may cause us to slip and fall
Talcum powder should not be spilled on the floor of room because it may cause us to slip and fall.

Question 5.
The easiest way to move a heavy wooden crate is to:
(a) place it on a trolley
(b) tie a rope one end and pull
(c) push it
(d) none of these

▼ Answer

(a) place it on a trolley
The easiest way to move a heavy wooden crate is to place it on a trolley.

Question 6.
The two common forces that are acting everywhere around us are:
(a) gravity and friction
(b) gravity and magnetic force
(c) electrostatic force and gravity
(d) friction and magnetic force

▼ Answer

(a) gravity and friction
The two common forces that are acting eveiywhere around us are gravity and friction

---

Question 7.
If we apply the force along the right, the friction acts along the:
(a) right direction
(b) left direction
(c) can’t say
(d) none of these

▼ Answer

(b) left direction
If we apply the force along the right, the friction acts along the left direction.

Question 8.
Which of the following is true:
(a) We write on a paper with pen due to friction
(b) A nail is fixed in the wall due to friction
(c) Soles of shoes wear out due of friction
(d) All of these

▼ Answer

(d) All of these
All the activities given occur due to friction.

Question 9.
Gymnasts apply some coarse substance on their hands to:
(a) increase friction for better grip
(b) decrease friction
(c) play fast
(d) none of these

▼ Answer

(a) increase friction for better grip
Gymnasts apply some coarse substances on their hands to increase friction for better grip.

Question 10.
In which of the following friction is troublesome:
(a) sharpening a knife by rubbing it against a stone
(b) applying the brekes to stop a cycle.
(c) walking on a wet road
(d) rubbing the matchstick with the side of matchbox before burning it

▼ Answer

(c) walking on a wet road
Walking on a wet road.

Question 11.
In which of the following friction is helpful:
(a) the engine of car becomes hot after running for some time
(b) soles of shoes were out after sometime
(c) pulling a drawer out of a desk
(d) using a towel to open a tightly closed lid of a bottle

▼ Answer

(d) using a towel to open a tightly closed lid of a bottle
Friction is helpful in using a towel to open a tightly closed lid of a bottle.

Question 12.
Function can be reduced by:
(a) using lubricants
(b) polishing
(c) using fine powder
(d) all of these

▼ Answer

(d) all of these
Friction can be reduced by using lubricants, polishing and fine powder.

Question 13.
Drag is:
(a) frictional force exerted by solids
(b) frictional force exerted by liquids
(c) frictional force exerted by gases
(d) frictional force exerted by fluids

▼ Answer

(d) frictional force exerted by fluids
Drag is frictional force exerted by fluids.

Question 14.
When one body roth over the surface of another body, the resistance to Its motion is called:
(a) sliding friction
(b) rolling friction
(c) static friction
(d) none of these

▼ Answer

(b) rolling friction
When one body rolls over the surface of another body, the resistance to its motion is called rolling friction.

Question 15.
Friction the rehuye motion between Io surfaces In contact.
(a) favours
(b) opposes
(c) is
(d) none of these

▼ Answer

(b) opposes
Friction opposes the relative motion between two surfaces in contact.

Question 16.
To increase friction:
(a) the surface is made smooth
(b) the surface is polished
(c) the surface is made rough
(d) powder is sprinkled on the surface

▼ Answer

(c) the surface is made rough
To increase friction the surface is made rough, smooth, polished and powdered surface decrease friction.

Question 17.
Which of the following has least friction:
(a) rolling friction
(b) static friction
(c) sliding friction
(d) none of these

▼ Answer

(a) rolling friction
Rolling friction has least friction.

Question 18.
Ball hearing:
(a) reduces friction
(b) increases friction
(c) make no change in friction
(d) none of these

▼ Answer

(a) reduces friction
Ball-bearing reduces friction.

Question 19.
Drag is:
(a) frictional force exerted by solids
(b) frictional force exerted by fluids
(c) both (a) and (b)
(d) none of these

▼ Answer

(b) frictional force exerted by fluids
Drag is frictional force exerted by fluids.

Question 20.
The frictional force of smooth surface is:
(a) less
(b) more
(c) zero
(d) none of these

▼ Answer

(a) less
The frictional force of smooth surface is less.

Question 21.
This type of friction is the most powerful of all types of frictions:
(a) static
(b) rolling
(c) sliding
(d) drag

▼ Answer

(a) static
Static friction is the most powerful of all types of frictions.

Question 22.
When two objectives are already moving the friction between them is called:
(a) rolling friction
(b) static friction
(c) sliding friction
(d) friction of fluid

▼ Answer

(c) sliding friction
When two objects are already moving the friction between them is called static friction

---

Question 23.
Ball-bearings are used to convert static friction into:
(a) drag
(b) sliding friction
(c) rolling friction
(d) none of these

▼ Answer

(c) rolling friction
Ball-bearings are used to convert static friction into rolling friction.

Question 24.
To convert the static, sliding friction into rolling friction, the heavy luggage carriers are attached with at their base.
(a) ball-bearings
(b) chains
(c) tyres
(d) wheels

▼ Answer

(d) wheels
To convert the static, sliding friction into rolling friction, the heavy luggage carriers are attached with wheels at their base, wheels decrease the friction.

Question 25.
Four children were asked to arrange forces due to rolling, static and sliding frictions in a decreasing order. Their arrangements are given below – Choose the correct arrangement:
(a) rolling, static, sliding
(b) rolling, sliding, static
(c) static, sliding, rolling
(d) sliding, static, rolling

▼ Answer

(c) static, sliding, rolling
The decreasing order is static, sliding and rolling.

Question 26.
Alida runs her 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 and 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

(b) newspaper, towel, dry marble floor, wet marble floor
The force of friction acting on the car on different surfaces in increasing order will be: Wet marble floor, dry marble floor, newspaper and towel.

Question 27.
The force of friction between two bodies is:
(a) parallel to the contact surface
(b) inclined at 30° to the contact surface
(c) perpendicular to the contact surface
(d) inclined at 60° to the contact surface

▼ Answer

(a) parallel to the contact surface
The force of friction between two bodies is parallel to the contact surface.

Question 28.
A coin pushed on a table stops because:
(a) no force acts on it
(b) it is very heavy

(c) the table exerts a frictional force on it
(d) the earth attracts it

▼ Answer

(a) no force acts on it
A coin pushed on a table stops because the table exerts a frictional force on it.

Question 29.
The main cause of wear and tear of machine is:
(a) poor quality of machine
(b) friction acting between different moving parts
(c) gravitational force of earth
(d) none of these

▼ Answer

(b) friction acting between different moving parts
The main cause of wear and tear of machine is friction acting between different moving parts.

Question 30.
Ball rolling on the floor stops due to:
(a) muscular force
(b) gravitational force
(c) magnetic force
(d) frictional force

▼ Answer

(d) frictional force
Ball rolling on the floor stops due to frictional force.

Match the Column-A with Column-B:

Question 1.

Column-A	Column-B
(a) Sparks are produced when a pair of scissors is sharpened against a grinding wheel.	(i) To make them rough and increase friction.
(b) A piece of chalk wears out as it is used on a blackboard.	(ii) Friction produces heat.
(c) Trolleys have wheels.	(iii) It acts as a lubricant.
(d) The leather soles of new shoes are rubbed on a rough surface.	(iv) Friction causes wear and tear.
(e) A surgeon powders his hands before pulling on his plastic gloves.	(v) Rolling reduces friction.

▶ Answer

Question 2.

Column-A	Column-B
(a) The shape of the body due to which it experiences less fluid friction	(i) friction.
(b) The friction experienced when a body is made to move over rollers	(ii) streamlining.
(c) The friction called into play when one body just slides over another body	(iii) rolling friction.
(d) The friction called into play when two bodies in contact with each other do not move on application of force	(iv) sliding friction.
(e) The opposing force called into play when two surfaces in contact with each other slide relative to one another	(v) static friction.

▼ Answer

Column-A	Column-B
(a) The shape of the body due to which it experiences less fluid friction	(ii) streamlining.
(b) The friction experienced when a body is made to move over rollers	(iii) rolling friction.
(c) The friction called into play when one body just slides over another body	(iv) sliding friction.
(d) The friction called into play when two bodies in contact with each other do not move on application of force	(v) static friction.
(e) The opposing force called into play when two surfaces in contact with each other slide relative to one another	(i) friction.

Question 3.

Column-A	Column-B
(a) Use of ball-bearing between hubs and axles of ceiling fans and bicycles	(i) lubricants.
(b) Tyres are treaded	(ii) friction produces heat.
(c) The substance reducing friction	(iii) friction is reduced.
(d) Jar of a mixer becomes hot	(iv) friction is increased.

▼ Answer

Column-A	Column-B
(a) Use of ball-bearing between hubs and axles of ceiling fans and bicycles	(iii) friction is reduced.
(b) Tyres are treaded	(iv) friction is increased.
(c) The substance reducing friction	(i) lubricants.
(d) Jar of a mixer becomes hot	(ii) friction produces heat.

State whether the following statements are True or False:

Question 1.
A new truck tyre will cause less friction with the road than an old worn out tyre.

▼ Answer

False

Question 2.
Oil is applied to machines to increase friction.

▼ Answer

False

Question 3.
Sliding friction is much less than rolling friction.

▼ Answer

False

Question 4.
Friction between the two surfaces can be reduced by polishing the surface.

▼ Answer

True

Question 5.
Friction is the force that slows down or keeps them from moving.

▼ Answer

True

Question 6.
Wheels reduce the friction between a moving body and the ground.

▼ Answer

True

Question 7.
Powder applied to a carrom-board increase friction.

▼ Answer

False

Question 8.
Friction helps you to walk more easily on a slippery surface.

▼ Answer

False

Question 9.
Friction acting on a moving body always act in the direction of motion of the body.

▼ Answer

False

Question 10.
Friction of air makes the meteors burn.

▼ Answer

True

Question 11.
Friction can produce heat.

▼ Answer

True

Question 12.
Rubbing of our palms makes us feel cold.

▼ Answer

False

Question 13.
Stricking a matchstick produces fire by friction.

▼ Answer

True

Question 14.
Soles of shoes and tyres are treaded to decrease friction.

▼ Answer

False

Question 15.
Friction opposes the fixing of nail in the wall.

▼ Answer

False

Fill in the blanks:

Question 1.
Friction opposes the …….. between the surfaces in contact with each other.

▼ Answer

relative motion

Question 2.
Friction depends on the …….. of surfaces.

▼ Answer

nature

Question 3.
Friction produces ……..

▼ Answer

heat

Question 4.
Sprinkling of powder on the carrom-board …….. friction.

▼ Answer

reduces

Question 5.
Sliding friction is …….. than the static friction.

▼ Answer

less

Question 6.
The force which opposes the motion of a body is ……

▼ Answer

friction

Question 7.
Friction is more on a …….. surface than on a …….. surface.

▼ Answer

rough, smooth

Question 8.
The friction between moving parts of a machine can be …….. by putting some machine oil on the parts.

▼ Answer

decreased

Question 9.
…….. are used in machines to protect their surfaces from wear and tear caused by friction.

▼ Answer

Lubricants

Question 10.
Smooth surfaces …….. friction.

▼ Answer

reduce

Question 7.
Soapy floor is slippery due to …….. friction.

▼ Answer

less

Question 8.
Friction increases with increase in ……

▼ Answer

roughness

Question 9.
…….. between two surfaces interlock to produce friction.

▼ Answer

Irregularities

Question 10.
Shape of the objects moving in fluids is …….. to overcome friction exerted by liquids.

▼ Answer

streamlined

Question 11.
Friction always works in …….. direction of the motion of the surface.

▼ Answer

opposite

Question 12.
If friction is not exerted than the moving bodies will never ……

▼ Answer

stop

Quesiton 13.
Grooves on tyres …….. friction between the tyre and road.

▼ Answer

increase

Question 14.
…….. enables us to move by providing the force that prevents us from slipping.

▼ Answer

Friction

Question 15.
Rolling friction …….. is than sliding friction.

▼ Answer

smaller

Question 16.
…….. friction comes into play when we try to move an object at rest.

▼ Answer

Static
