

PHYSICS

MCCQ

1. Water can change from a liquid to a gas
2. The process by which a solid changes directly into a gas
3. Evaporation is when ~~any~~ a substance changes ~~into~~ from a liquid to a gas naturally
4. The physical forms in which a substance can exist; includes solid, liquid, gas and plasma:
5. all of these.
6. Frictional force
7. all of these
8. polished metal surface
9. contact force.

- 10. Rolling friction.
Choose team to bill on the blocks.
- 11. Force has to be applied to change the direction of a moving object.
- 12. When an elephant drags a wooden log over the land, the forces that are applied on the log are muscular force, frictional force and gravitational force.
- 13. A ball was set ~~roll~~ rolling on a large table. If its motion is to be changed a force will have to be applied on it.
- 14. The force of friction always acts against the motion.
- 15. a) gravity

b) ~~strain~~ gravitational force

c) mechanical force

d) muscular force

16. a) metric ton.

b) 0.01 m or $\frac{1}{100}m$

c) 0.001 m or $\frac{1}{1000}m$

d) 3 kt

e) ~~10 m~~ 0.1 m or $\frac{1}{10}m$

f) ~~100 m~~ 10 m

g) 100 m

h) 0.001 kg or $\frac{1}{1000}kg$

i) 0.000001 kg

j) 453.59 g

k) 3600 s

l) 31,536,000 s

m) 26,400 s

- n) ~~0.001 kg~~ 100 m^2
- o) ~~100~~ $10,000 \text{ m}^2$
- p) $10,00,000 \text{ m}^2$
- q) 10^{-3} cm^2
- r) 10^{-4} m^2
- s) 10^{-6} m^2
- t) 0.836 m^2
- u) 0.0424 m^2
- v) 4046.856 m^2

2 Mark Question

17. The effects of friction are:

- ▶ Friction stops a moving object.
- ▶ Friction causes wear and tear.
- ▶ ~~For~~ Without friction a moving body will never stop.

18. The factors which affect force of

Friction are:

- Roughness of a surface
- Inclination of a surface
- Smoothness of a surface

► Roughness of a surface: If the roughness of a surface will be high then the friction produced too will be very high.

► Inclination of a surface: The friction produced on a surface also depends on how inclined it is. For example a normal road will produce more friction than a mountain road.

► ~~Smoothness~~ Smoothness of a surface: The smoothness of a surface causes the amount of friction produced. A

toy car will go ~~in~~ faster on polished surface than a rough road.

19. \blacktriangleright Static friction: Static friction is a force that \odot hinders the movement of an object moving along the path. When two \odot bodies slide over each other, this friction occurs.

\blacktriangleright Sliding friction: Sliding friction is a force that hinders the movement of an object moving ⁱⁿ sliding path. The friction between two bodies that are in sliding contact is called sliding friction or kinetic friction.

\blacktriangleright Rolling friction: Rolling friction is a ~~force~~ that resistance to motion by bodies that are in rolling contact.

20. The disadvantages of friction are:-

- Friction produces heat which damages the moving parts of a machine.
- Friction produces wear and tears on the contacting surfaces. This reduces the life of machine parts, tyres and shoe soles.
- A lot of energy is wasted in overcoming the friction before an object starts moving.

21. When you rub the head of the matchstick on the striking surface of the matchbox, some heat is generated due to the friction. This heat breaks a small part of the red phosphorus chain. After that some red phosphorus

transforms into white phosphorus. When Sulphur, oxygen and heat come together, fire is produced.

22. The soles of our shoes get worn out after a period of time due to the effect of friction. The soles of shoes increase the friction, because it makes the surface of the shoes rough. When we walk on the road, then the friction arises.

23. a) 16 ft

b) 30.48 cm

c) 0.2 m

d) 420 cm

e) 200 m

f) ~~0.9~~ 2 mm

g) 0.91 m

3 Mark Question

24. Define

- An applied force is a force that is applied to an object by a person or another object. If a person is pushing a desk across the room, then there is an applied force acting upon the object. The applied force exerted on the desk by the person.
- In physics, tension is described as the pulling force transmitted axially by the means of a string, a cable, chain or similar object or by each end of a rod.

Friction is the force resisting the relative motion of solid surfaces, fluid layers and material elements sliding against each other. There are several types of friction

25. Solids: Solids are rigid, they have a definite size, definite shape and a definite volume.

Liquids: Liquids do not have a definite shape, but have a definite volume and can flow from a higher to a lower level. They show the property of viscosity and surface tension because of cohesive forces.

Gas: A gas has neither a definite shape nor a definite volume but it

cannot and is easily compressible.

26. Most substances change from one state to another when heat is either removed from them or added to them. When we add heat to water, it changes into vapour also when we remove heat from water by freezing, it changes into ice.

27. a) A machine is oiled from time to time to reduce friction between its body parts. By doing so, the life span of a machine increase.

b) An object thrown upwards comes down after reaching a point. This is because of the Earth's gravitational pull.

2) The result of smoothening is that friction between the brake and the board decreases and brake slides smoothly on the surface not losing its momentum too quickly. Hence, we can say that sprinkling of powder on the carrom board reduces friction and makes sliding smoother and easier.

28. When we suddenly push brake of a vehicle at high speed, it creates a lot of friction. It means increase in friction. We pour oil in hinges of door to make it free to open and close. It means decrease in friction.

29. Cartilage is found in our body's joints and helps to minimize

friction during joint movement. However, if the cartilage wears away, the power of friction increases, reducing the fluidity of movement and causing joint pain.

30. Mass is a quantitative measure of inertia, a fundamental property of all matter. It is, in effect, the resistance that a body of matter offers to a change in its speed or position upon the application of a force. In contrast, mass remains constant regardless of its location under ordinary circumstances.

S.I. = kg (kilogram)

C.G.S. = g (gram)

FPS = lb (pound)

- 31. a) 0.2 metric tonne
- b) 1.5 quintal
- c) 4.5359 kg
- d) 0.25 kg
- e) ~~0.25~~ 10 g
- f) 0.000005 kg

32. A clinical thermometer has markings from 35°C to 42°C . It has a slight bend or kink in the stem just above the bulb. This kink is called constriction. This constriction prevents the mercury from falling back all by itself. The temperature of a healthy person is 37°C . This temperature is marked by a red arrow.

Clinical thermometers marked in $^{\circ}\text{F}$ are also available. They have markings from 95°F to 110°F . The red column indicating the temperature of a healthy person is at 98.6°F .

Before use, the bulb of the thermometer is washed by keeping it in a beaker containing cold water. Then it is slightly jostled to bring the level of mercury in its capillary tube below the mark 37°C . Then to measure the temperature of a patient's body, its bulb is kept either below the tongue or under the armpit of the patient for about a minute after which the thermometer

is taken out and patient's body is above 37°C he/she is said to be suffering from fever.

33. a) metre, seconds, kilogram
 b) celsius
 c) 1000kg or 10 quintal
 d) ice
 e) clinical
 f) 37°C or 98.6°F

34.

