

AUTUMN HOLIDAY HOMEWORK.

PHYSICS

- 1) Which change can occur when you add heat energy to water? → a) the water can change from a liquid to a gas
- 2) What is sublimation? → a) the process by which a solid changes directly into a gas.
- 3) Evaporation is when: → b) a substance changes from a liquid to a gas (or vapor) naturally.
- 4) What are states of matter? → a) the physical forms in which a substance can exist; includes solid, liquid, gas, and plasma.
- 5) Force changes the: - a) motion of body
b) Speed of body c) shape of body
- 6) Which of the following is responsible for wearing out of bicycle tyres? → a) frictional force.
- 7) Force of friction depends on: → a) roughness of surface
b) smoothness of a surface c) inclination of surface
- 8) A toy car released with the same initial speed will travel farthest on: → b) polished marble surface
- 9) Friction is a: → b) contact force
- 10) Which of the following produces least friction? → b) Rolling friction
- 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, gravitational force and frictional force.

13) A ball was set 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) An object falling from a tall building
→ Gravitational force

b) An aeroplane flying in the sky → frictional force

c) Squeezing sugarcane juice with a squeezer
→ muscular force

d) Winnowing of grain → muscular force.

16) a) 10 quintal = 1 metric ton

b) 1 cm = 100 metre

c) 1 mm = 0.001 metre

d) 1 yard = 3 feet

e) 1 decimetre = 0.1 metre

f) 1 decameter = 10 metre

g) 1 hectometre = 100 metre

h) 1 gram = 0.001 kg

i) 1 mg = 0.000001 kg

J) 1 lb = 0.454 kg

K) 1 h = 3600 s

L) 1 year = 31536000 s

M) 1 day = 86400 s

N) 1 decametre² = 100 m²

O) 1 hectare = 10000 m²

P) 1 km² = 1000000 m²

Q) 1 dm² = 100 cm²

R) 1 cm² = 0.001 m²

S) 1 mm² = 1000000 m²

T) 1 square yard = 0.836 m²

U) 1 square ft = 0.0929 m²

V) 1 acre = 4046.856 m²

17) The effects of a force are:-

- * Moves a body originally at rest
- * Stops a moving body
- * Make a moving body to move faster.
- * slows down a moving body
- * changes the direction of motion of a moving body.
- * changes the shape or size of a body.

18) Factors affecting the force of friction:-

D) The smoothness of a surface:- The force of friction is more between rough surfaces and less between smooth surfaces

- ② The nature of medium in which the body moves :- A solid, liquid or gas, all exert the force of friction on a moving body.
- ③ The weight of the moving body on the surface :- Greater the weight of the moving body on a surface, more is the force of friction on the body by the surface.
- 19) The force applied on an object as push or pull on a surface is called static friction. When the body begins to slide on a surface, the force exerted by the surface on the object is called the sliding friction. When an object rolls over a surface, the force which opposes the rolling motion of the object is called the rolling friction.
- 20) Friction opposes the motion of a body, so it decreases the efficiency.
- Friction causes wear and tear in the moving parts.
 - Friction produces heat.
- 21) A matchstick catches fire when rubbed on the rough surface of the box due to the frictional force.

22) The sole of shoes get worn after some time because friction causes wear and tear in the moving parts.

23) a) 12 inch = 1 ft

b) 1 ft = 30.48 cm

c) 20 cm = 0.2 m

d) 4.2 m = 420 cm

e) 0.2 km = 200 m

f) 0.2 cm = 2 mm

g) 1 yard = 0.91 m

24) applied force - It is a force applied on a body or a surface.

• Tension - It is a force when a load is suspended from an object.

• frictional force - The frictional force is a force exerted by a surface on a body in contact with it.

25) Solids

- Has a definite shape and size
- are closely packed.
- Highly-rigid

Liquids

- has a definite volume not a shape
- are loosely packed
- less rigid

Gases

- has neither a definite volume or shape
- are wide apart
- non-rigid.

26) Matter changes from one state to another by change in temperature and pressure. For example, solids on heating change to liquid, liquid on further heating changes to gases.

27) A machine is oiled from time to time to reduce friction between its body parts.

~~b. 28~~ An object thrown upwards comes down after reaching a point. This is because of the Earth's gravitational pull.

~~c. 28~~ Powder is sprinkled on a carrom board because it helps reducing friction and makes sliding smoother and easier.

28) When we suddenly push brakes of vehicles of high speed, it create 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 minimise friction during joint movement. However, as this cartilage wears away, the power of friction increases.

30) A mass is a large body of matter with no definite shape.

31) b) $150 \text{ Kg} = 1.5 \text{ quintal}$

c) $10 \text{ lb} = 4.5359 \text{ Kg}$

d) $250 \text{ g} = 2.5 \text{ Kg}$

e) $0.01 \text{ Kg} = 10 \text{ g}$

f) $5 \text{ mg} = 5 \times 10^{-6} \text{ g}$

g) $2000 \text{ Kg} = 2.0 \text{ metric tonne}$

32) Doctors use a special thermometer called the clinical thermometer for measuring the temperature of the patient's body. This thermometer has the markings from 35°C to 42°C . It has a slight bend or kink in the stem above the bulb.

A temperature over 100.4°F (38°C) most often means you have a fever caused by an infection or illness.

The normal temperature is 98.6 degrees Celsius or 37 degrees Fahrenheit.

33) a) The S.I. unit of length is metre
of time is second of mass is Kilogram
b) $^\circ\text{C}$ is the unit of temperature.

c) $1 \text{ metric tonne} = 1000 \text{ Kg}$

d) The zero mark in Celsius thermometer is the melting point of ice.

- 2) The thermometer ~~is~~ used to measure the human body is called the clinical thermometer.
- 3) The normal temperature of human body is 37°C or 98.6°F .
- 3) Take 100 ml of water in beaker A and dissolve 2-3 crystals of potassium Permanganate in it. You will get a deep purple coloured solution and mix it with 90 ml of water in Beaker B. Repeat the process. This experiment shows that a single crystal of potassium permanganate is made of a large number of tiny particles which can colour a large volume of water.