

Physics (Science)

1. One Mark Questions

• MCQ

(1) Which changes can occur when you add heat ~~an~~ energy to water?

Ans c) Water can change from a liquid to a gas.

(2) What is Sublimation?

Ans c) The process by which a solid changes ~~direction~~ directly into a gas.

(3) Evaporation is when

Ans b) a substance changes from a liquid ~~to a gas~~ to a gas (or vapour) naturally.

(4) What are states of matter?

Ans d) The physical forms in which a substance can exist; includes solid, liquid, gas, and plasma.

(5) Force changes the

Ans d) All of ~~the~~ these

6) Which of the following is responsible for wearing out of bicycle tyres?

Ans c) Frictional force

7) Force of friction depends on

Ans of d) all the of these

8) A toy car released with the same initial speed will travel farthest on

Ans b) A polished marble surface

9) Friction is a

Ans b) Contact force

10) Which of the following produces least friction?

Ans b) Rolling friction

Choose the term to fill in the blanks.

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, Mechanical and Frictional.

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. One or more forces are acting in the following examples. Name them.

a) An object falling from a tall building. Gravitational force

b) An aeroplane flying in the sky. Mechanical force

c) Squeezing juice with a squeezer. Mechanical and Muscular force

d) Winnowing food grain. Gravitational Force

2 ~~set~~ mark questions

17. What are the effects of friction?

- Ans.
1. Friction opposes motion & ~~the~~ has
 2. Friction always acts in a direction opposite to the direction of motion.
 3. Friction produces heat.
 4. Friction causes wear and tear

~~2~~

18. What are the factors ^{that} affect force of friction and how?

- Ans
1. The smoothness of the surface.
 2. The nature of medium (solid, liquid or gas) in which the body moves.
 3. The weight of the moving body on the surface.

19. Define, static friction, sliding friction & rolling friction.

Ans Static friction - The force of friction acting on the object is called the static friction.

Sliding friction - When the body begins to slide on a surface, the force exerted by the surface on the object is called the sliding friction.

Rolling friction - When an object rolls over a surface, the force which opposes the rolling motion of the object is called the rolling friction.

20. What are the disadvantages of friction?

Ans Disadvantages of friction:

1. Friction opposes the motion of a body, so it

decreases the efficiency (i.e., more force is needed to move a body).

2. Friction causes wear and tear in the moving parts.

3. Friction produces heat

(21) Ans Friction produces heat due to which matchstick catch fire when rubbed on the rough ~~so~~ surface of the box.

(22) Ans Because, friction causes wear and tear sole of the shoes get worn after some time.

(23) Convert the following quantities as indicated.

(a) $12 \text{ inch} = 1 \text{ ft}$

(b) $1 \text{ ft} = 30 \text{ cm}$

(c) $20 \text{ cm} = \frac{20}{100} \text{ m}$

(d) $4.2 \text{ m} = 420 \text{ cm}$

(e) $0.2 \text{ km} = 200 \text{ m}$

(f) $0.2 \text{ cm} = 2 \text{ mm}$

(g) $1 \text{ yard} = \frac{90}{100} \text{ m}$

3 mark questions

(24)

Define -

Applied force = When we push, pull, stretch and squeeze, we are applying force

Tension = When a load is suspended from a string we can see the force of tension as a contact force.

Frictional Force = The force of which slows down the motion of a moving body in contact with the surface of another body, is called the frictional force.

(25)

Compare properties of solids, liquids and gases. (any 3 points)

Properties	Solids	Liquids	Gas
Mass	Definite	Definite	Definite
Shape	Definite	Acquires the shape of the container	Acquires the shape of the container
Volume	Definite	Definite	Indefinite, acquires the volume available.

Ques) Most substances do not change from one state to another under different conditions of temperature and pressure. Explain with Examples.

Ans) Most substances can change from one state to another under different conditions of temperature and pressure. For example: After heating ice on a boiling temperature of it will turn into water and if we will heat it for some more time it will become water vapour.

Ques) Why

(a) Machines are not oiled to ~~or~~ from time to time.

Ans) Machines are oiled from time to time to stop them from stop working by friction. As the machine parts continue to ~~collide~~ due to friction it will ~~stop~~ stop working. Oil is a lubricant used to stop friction ~~between~~ between machine parts.

(b) An object thrown upwards comes down after reaching a point.

Ans) An object thrown upwards comes down after reaching a point. Due to gravitational force of the earth.

c) Powder is sprinkled on a carrom board.

Ans To reduce friction.

(28) Explain increasing and decreasing friction with suitable examples.

Ans To increase the friction we should not polish the floor, so we can move smoothly on the floor. To decrease the friction lubricants and powder are generally used so that the machines will run smoothly.

(29) Cartilage is present in joints in our body, which helps in their smooth movement. If cartilage wears off, how will this affect the movement of joints?

When

Ans ¹ Cartilage will wear off there will be more friction in the joints, that will be more rub and make pain in the joints while movement in the body.

(30) Define Mass. State its (1) S.I. (2) C.G.S. (3) F.P.S. units. How they are related?

Ans The mass of a body is the quantity of matter contained in it.

(1) The S.I. unit of Mass = Kilogram (kg)

unit

(2) The C.G.S.¹ of Mass = Gram (g)

(3) The F.P.S. unit of Mass = Pound (lb)

(31)	System	Unit and symbol of length	Unit and symbol of mass	Unit and symbol of time
1.	C.G.S.	Centimetre (cm)	Gram (g)	Second (s)
2.	F.P.S.	Foot (ft)	Pound (lb)	Second (s)
3.	S.I.	Metre (m)	Kilogram (kg)	Second (s)

(31) Convert the following quantities as indicated

a) $200 \text{ kg} = \frac{2}{10} \text{ metric tonne}$

b) $150 \text{ kg} = \frac{3}{2} \text{ quintal}$

c) $10 \text{ lb} = \underline{4.5359} \text{ kg}$

d) $250 \text{ g} = \frac{1}{4} \text{ kg}$

e) $0.01 \text{ kg} = \underline{10} \text{ g}$

f) $5 \text{ mg} = \underline{1/200000} \text{ kg}$

(32) FIB

- a) The S.I. unit of length is metre of
time is seconds of mass is
kilogram
- b) $^{\circ}\text{C}$ is the unit of temperature
- c) 1 metre tonne = 10 quintal or 1000 kg
- d) The zero mark in Celsius thermometer is the
point of _____.
- e) The thermometer used to measure the human
body is called the clinical thermometer.

(16) Convert the following quantities as
indicated.

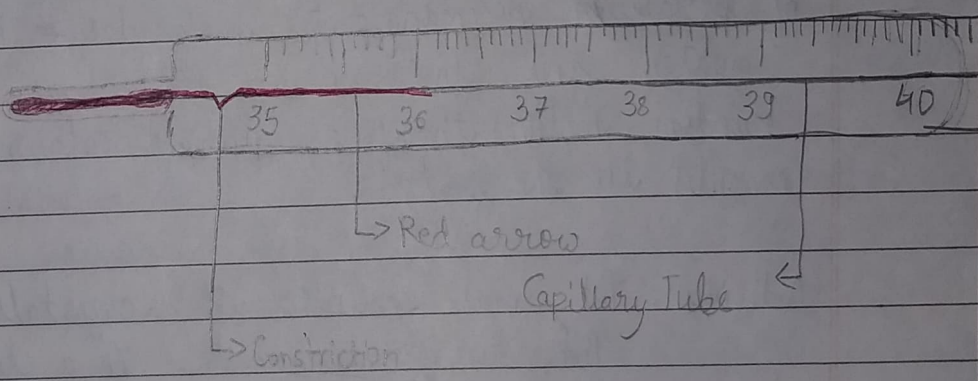
- a) 10 quintal = 1 metric ton
- b) 1 cm = 1/100 m
- c) 1 mm = 1/1000 metre
- d) 1 yard = 3 ft
- e) 1 decimetre = 1/10 metre
- f) 1 decametre = 10 metre
- g) 1 hectometre = 100 metre
- h) 1 gram = 1/1000 kg
- i) 1 mg = 1/1000000 kg
- j) 1 lb = 453.59 g
- k) 1 h = 3600 s

- l) 1 year = 31, 536, 000 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 = 1/10000 m²
- s) 1 mm² = 1/100000 m²
- t) 1 square yard = 0.836 m²
- u) 1 square ft = 929/1000 m²
- v) 1 acre = 4046.856 m²

(32)

What is a clinical thermometer? State its special feature, Draw a labeled neat diagram of a clinical thermometer showing the range of temperature marked on it.

Ans



Clinical thermometer

Doctors use a clinical 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

It is a slight bend or kink in the ~~steam~~ stem just above the bulb. This kink is called the constriction. This constriction prevents the mercury from falling back all by itself. The ~~in~~ temperature of a healthy person is 37°C . This temperature is marked by a red arrow.

(34) When crystal of potassium permanganate is placed in a beaker, purple colour spreads through out the water. ~~What~~ What does this ~~by~~ observation tell us about the nature of Potassium permanganate and water? Explain with an activity.

Ans When crystal of potassium permanganate is placed in a beaker, purple colour spreads throughout the water due to the diffusion of potassium permanganate molecules ~~in~~ in the water and molecules of water are in a random motion therefore, purple colour spreads evenly in the water.

Activity: Put some ~~couple~~ couple of crystals of Potassium Permanganate in a beaker containing ~~of~~ water, the purple colour of potassium permanganate spreads through the ~~the~~ throughout the water in a beaker.