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Physics Autumn Holiday Worksheet

1. One mark questions

1. Water can from liquid to solid

2. The process by which a solid directly changes directly into a gas

3. A substance changes from a liquid to a gas (or vapour) naturally

4. The physical forms in which a substance can exist includes solid, liquid and gas.

5. Motion of body
Speed of body
Shape of body

6. Frictional force

7. Roughness of the surface

8. Polished marble surface

9. Contact force

10. Rolling friction.

11. Force, direction, moving object

12. Muscular force, frictional force, gravitational force

13. Motion, force

14. Against

15. (a) Gravitational force
(b) Mechanical force and gravitational force
(c) Muscular force
(d) Muscular force and gravitational force.

16. a) 1 metric ton
b) ~~1~~ $\frac{1}{100}$ metre
c) $\frac{1}{10}$ metre

(d) 1 yard = 3ft.

(e) 10 metre

(f) 1 decimetre = $\frac{1}{10}$ metre

(g) 100 metre

(h) $\frac{1}{1000}$ kg

(i) 10^4 kg

(j) 453.59 g.

(k) 3600 s

(l) 3.15×10^{-7} seconds

(m) 86400 seconds

(n) 1 decametre² = 100m²

(o) 10^4 m²

(p) $1 \text{ km}^2 = 10,00,000 \text{ m}^2$

(q) 100 cm^2

r) 10^{-4} m^2

s) 10^{-6} m^2

t) 0.836 m^2

u) 0.04290 m^2

v) 4046.856 m^2

2 mark question

17. The effects of friction are:-

- Friction opposes motion
- Friction acts in an direction opposite to the direction of motion
- Friction produces heat
- Friction causes wear and tear

18. The factors affecting friction are:-

1. Smoothness of the surface - The force of friction is more in rough surface but it is less in 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. The force of friction between

a solid and another solid is more, less between a solid and liquid and still less between a solid and a gas.

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.

19. Static friction - When an object is just about to move on a slanting surface, at this time the friction acting upon the object is called static friction.

Sliding friction - When an object is sliding on a surface, the friction acting upon the object is called sliding friction.

Rolling friction - When an object is rolling on a surface, the friction acting upon the object is called rolling friction.

- 20 • Friction reduces efficiency
• Friction produces heat
• Friction causes wear and tear.

21 On rubbing the match stick in the rough surface, the friction converts this work into heat. The heat raises the temperature of the chemical present on the match stick head to its ignition temperature.

22 The soles of our shoes get worn out after a period of time due to effect of friction. The soles of shoes increase the friction because it makes the surface of the shoes rough.

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

(b) $1 \text{ ft} = 30.48 \text{ cm}$

(c) $4.2 \text{ m} = 42 \text{ cm}$

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

(e) 200 metres

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

(g) 0.91 m

25. 3 mark question

- Applied force - A force which is applied externally on a body is called applied force.
- Tension force - Tension force is the force that is transmitted through a cable, rope, wire or string when it is pulled tight by forces acting from opposite ends.
- Frictional force - Force which acts in an direction opposite to the direction of motion is called frictional force.

26.

	Solid	Liquid	Gas
1.	Solids are highly rigid.	Liquids are less rigid.	Gases are not rigid.
2.	Solids have strong intermolecular force of attraction.	Liquids have weak intermolecular force of attraction.	Gases have very weak intermolecular attraction.
3.	Solids have a definite shape and size volume.	Liquids have a definite volume but no definite shape.	Gases do not have a definite shape or volume.

Shape or volume

27. In normal condition of temperature water occurs in liquid state. On increasing the temperature it turns into water vapour. On decreasing the temperature it turns into ~~solid~~ liquid. Again on cooling it turns into ice. Hence matter can be converted from one state to another under different conditions of temperature.

- Effect of change of pressure on decreasing pressure liquid changes into gas and on increasing pressure, a gas changes into liquid. When petroleum gas is filled into cylinders under high pressure, the gas changes into liquid state. When the Lpg is released out of the cylinder the pressure gets reduced and the liquid changes into its gaseous state.

28. (a) A machine is ~~etc~~ oiled from time to time to reduce friction between its body parts. By doing so the life span of a machine increases.

(b) An object thrown upwards comes down after reaching a point as the gravitational force attracts the object towards the centre of the earth.

(c) Powder is sprinkled on a carrom board to reduce the friction so that we can easily strike the carrom dots.

29. Friction increases when the surface is very rough. But on smooth surfaces friction decreases. For example when we push a toy car on the carpet it stops after some time but when it is pushed on a marble floor it goes ~~so~~ very far than on the carpet.

30. If the cartilage wears off, there would be friction between the joints as they will rub each other while moving and the bone would damage.

31. Mass of 1 litre water kept at 4°C is taken as kilogram.

S.I. unit - kilogram

E.P.S - gram

C.G.S - Gram

32. (a) $\frac{1 \text{ kg} = 1000 \text{ gram}}{1000}$ metric tonne

(b) $150 \text{ kg} = 1.5 \text{ quintal}$

(c) 45359 kg

(d) $250 \text{ g} = \frac{250}{1000} \text{ kg} = \frac{25}{100} \text{ kg}$

(e) $10 \text{ g} \checkmark$ $1000 \checkmark$ 100

(f) ~~10 g~~ 5×10^6

33. Clinical thermometer is a special thermometer used by the doctors to check the temperature of a patient's body.


Its special feature is It has a construction which ~~prevents~~ prevents the mercury bulb to fall back.



Temperature of normal human body is 37°C . It is indicated by a red arrow.

34. (a) metre, second, kilogram
(b) temperature
(c) 10 quintal
(d) ice
(e) clinical thermometer
(f) ~~37~~ $^{\circ}\text{C}$ or 98.6°F
37

35. Take a 100ml of water 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 90ml of water in Beaker B. Again take 10ml



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of water from beaker B and pour it in beaker C which contains 90 ml water. Keep on diluting this potassium permanganate solution like this a number of times and you will find that the colour of the solution becomes fainter and fainter but it's still pink. This experiment shows that a single crystal of potassium permanganate is made up of a large number of tiny particles which can colour a large volume of water.