HW

13.10.21 Revision HHW

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- Multiple choice questions.

1. Which change can occur when you heat energy to water?

ans. The water can change from a liquid to a gas.

2. What is sublimation?

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

3. Evaporation is when.

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

4. What are states of matter?

ans. The physical forms in which a substance can exist is includes solids, liquid, gas and plasma

5. Force changes the.

ans. motion of body, speed of body, shape of body.

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

ans. Frictional force.

7. Force of friction depends on
ans: roughness, smoothness and inclination of the surface.

8. A toy car released with the same initial speed will travel farthest on
ans: Polished marble surface.

9. Friction is a
ans: contact force.

10. Which of the following produces least friction?
ans: 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

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

a) An object falling from a tall building - gravitational force.

b) A ~~aircraft~~ aeroplane flying in the sky - gravitational force, mechanical force.

c) Squeezing sugarcane juice with a squeezer, mechanical force, muscular force.

d) Winnowing food grain - gravitational force, muscular force

16. Convert the following quantities as indicated.

a) 10 quintal = 1 metric tonne

b) 1 cm = $\frac{1}{100}$ metre.

c) 1 mm = $\frac{1}{1000}$ metre.

d) 1 yard = 3 ft

e) 1 decimeter = $\frac{1}{10}$ meter

f) 1 decameter = 10 meter

g) 1 hectometer = 100 meter

h) 1 gram = $\frac{1}{1000}$ kg

i) 1 mg = 10^{-6} kg

j) 1 lb = 453.54 g

k) 1 h = 60 x 60 s = 3600 s

l) 1 year = 365 x 60 x 60 x 24
= 365 x 120 x 21
= 365 x 86400 s
= 3.15 x 10^7 s

m) 1 day = 24 x 60 x 60 = 24 x 120 s = 86400 s

n) 1 decameter^2 = 10m x 10m = 100 m^2.

o) 1 hectare = 100m x 100m = 10000 m^2

p) 1 km^2 = 1000 m x 1000m = 1000000 m^2

~~q) 1 dm^2 = 1000 x 1000 = 100~~

q) 1 dm^2 = 10 x 10 = 100 cm^2

r) 1 cm^2 = $\left[\frac{1}{1000} m\right] \times \left[\frac{1}{100} m\right] = \frac{1}{10000} m^2$

s) 1 mm^2 = 10^{-6} m^2

t) 1 square yard = 0.9144 m x 0.9144 m
= 0.836 m^2

u) 1 square ft = 0.09290 m^2

v) 1 acre = 4046.856 m^2

2 mark questions.

17. What are the effects of friction?

ans. Effects of friction are :-

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i) It causes wear and tear.
ii) It opposes motion
iii) It produces heat
iv) Friction always acts in a direction opposite to the direction of motion.

18) What are the factors affect force of friction and how?

ans. Factors affecting force of friction are :-

i) The smoothness of surface - Friction also depends on the smoothness of the surface, if the surface is rough then friction is more and if the surface is smooth enough then the friction is low.

ii) The nature of medium in which the body moves : The friction is more between a solid and solid and less in solid and liquid and more less in solid and gas.

iii) weight of the moving body on the surface - If the weight of the moving body on the surface is more, then the friction is more.

19. Define :-

i) Static friction - The maximum force exerted on a body so long as its remain stationary is

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19. Define :-

i) Static friction - The maximum force exerted on a body so long as its remain stationary is

is called the force of friction.

ii) Sliding friction- The minimum force need to a body to keep moving on the surface that it moves equal distance in equal interval of time is called sliding friction.

iii) Rolling friction- The minimum force required to roll a body to move on the surface is called rolling friction.

20. What are the disadvantages of friction?

ans- Disadvantages of friction are:-

i) It causes wear and tear in the moving parts of the body.

ii) It produces heat in the moving part of the body

iii) It reduces the efficiency

21. Why does a matchstick catch fire when rubbed on the rough surface of the box?

ans- friction produces heat, so when we rub a matchstick with the rough surface of the box produces heat due to the friction. As a result the matchstick catches the fire.

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22. The sole of shoes get worn after some time. Explain why?

ans. The sole of shoes get worn after some time because ~~due to wear and tear~~ of the friction which causes wear and tear. ~~The friction is~~

23. Convert the following.

a) 12 inch = 1 ft

b) 1 ft = 30.48 cm.

c) 20 cm = 0.2 m

$= \frac{20}{100} = 0.2$ m.

d) 4.2 m = 420 cm

$= 4.2 \times 100 = 120$

e) 0.2 km = 200 m

$= 0.2 \times 1000 = 200$ m.

f) 0.2 cm = 2 mm

$= 0.2 \times 10 = 2$

g) 1 yard = 0.91 m

3 mark question.

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29. Defin

i) Applied force - A force which is applied by a person on an object.

ii) Tension force - The force that is applied on the string in the opposite direction.

iii) frictional force - The force which opposes the motion between two surface who are contact with each other.

28. Compare properties of solid, liquid and gas.

solid	Liquid	gas
i) Have a definite shape.	i) Do not have a definite shape take the shape of the container	iii) Do not have a definite shape
ii) have a definite mass.	ii) have a definite mass	ii) have a definite mass.
iii) Solids are highly rigid	iii) less less.	iii) Not rigid

26. Most substances can 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.

(i) For example, A substance change from solid to liquid on absorbing heat a particular temperature. This process is called melting or fusion point.

(ii) For example, A substance change from liquid to gas when it absorb heat at a particular temperature. As the heat is absorbed by a substance in liquid state increases the energy of molecules due to which they start to move very fast. Hence a liquid convert in a gas.

27. Why?

a) Machine are oiled from time to time.

ans- Machine should be oiled from time to time because friction causes wear and tear in the moving parts of the body. So, to reduce friction a machine are oiled from time to time.

b) An object thrown upwards come down after reaching a point

ans- An object thrown upwards comes down after reaching a certain point because of the gravitational force which exert all the objects

towards the Earth.

e) Powder is sprinkled on a carom board.

ans- Powder is sprinkled on a carom board to reduce friction between the pieces and the board.

26. Explain increasing and decreasing friction with suitables examples.

For increasing:

ans- i) We can increase the friction by making the surface dry and rough. For example when we walk on a dry and rough surface the friction is more.

ii) We can also ~~the surface~~ increase the friction by increasing the weight of the object. For example you can feel that when the weight of the object is more it's difficult to move, this is due to the increasing of the friction.

For decreasing:

i) We can also decrease the friction by making the surface smooth, ~~for example~~ for example. You have observed that it's easy to move an objects on a smooth surface.

ii) By streamlining. You have observed that the vechiles like boat, ship, aeroplane etc are designed uniquely, it is due to reduce friction.

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iii) By using lubricants and ball bearing -
for example, you have observed that some time the hinge of the door get rusted at that time we use oil which act as a lubricant and reduces friction. As the rolling friction is less than sliding friction. We use ball bearing ~~instead of using~~ to reduce friction.

29. Cartilage is present in joints of our body, which helps in their smooth movement. If cartilage wear off, how would his affect the movement of joint?
ans Cartilage is present in joints of our body, which reduces friction and helps in their smooth movement. If cartilage wears off the friction will increase and hence we will suffer from severe joint pain.

30. Define mass, State its SI unit. How are ~~these~~ CGS and FPS are related to the SI unit of mass?
ans The mass is the ~~matter~~ quantity of matter contained in a body. The SI unit of mass is kilogram (kg).
In CGS - (G) gram is the unit of mass
In FPS - (P) pound is the unit of mass.

31. Convert the following quantities as indicated:
a) 200 kg = 0.2 metric tonne
1 metric tonne = 1000 kg

So, $\frac{20}{100} = 0.2$

b) 150 kg = 1.5 quintal

1 quintal = 100 kg

So, $\frac{150}{100} = 1.5$

c) 10 lb = 4.5359 kg

10 lb = 4535.9 g

1000 g = 1 kg

$\frac{4535.9}{1000}$ g = 4.5359 kg

d) 250 g = 0.25 kg

1000 g = 1 kg

So, $\frac{250}{1000} = 0.25$

e) 0.01 kg = 10 g

1 kg = 1000 g

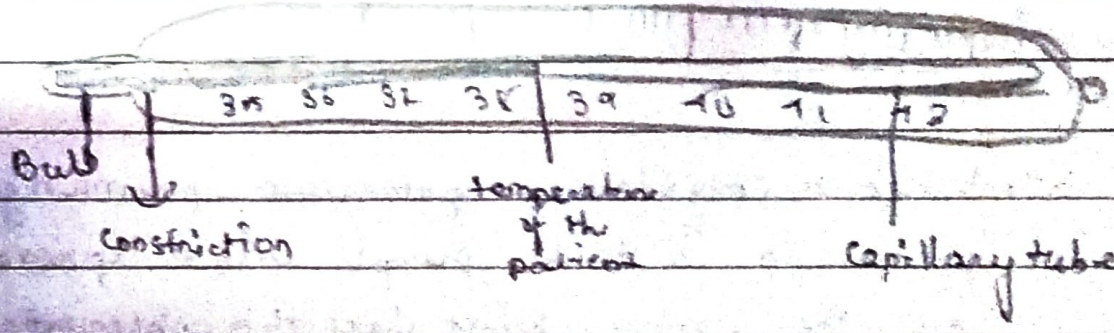
So, $0.01 \times 1000 = 10$

f) 5 mg = 5×10^{-6} kg

32. What is a clinical thermometer. State its special features. Draw a labled neat diagram of a clinical

thermometer showing the range of ~~thermometer~~ temperature marked on it. What is the normal temperature of a human body? How is it indicated in a clinical thermometer?

Ans. Clinical thermometers are used by doctors to measure the temperature of a sick person. A clinical thermometer has marking from 95°c to 112°c. It has a kink in the stem just above the ball. The kink is called constriction. The constriction prevents the mercury from falling back by itself.



The normal temperature of a human body is 37°c or 98.6°f.

To measure the temperature of a patient doctors use to keep the bulb under the arm or on the tongue for some time. After some time the thermometer is taken out from the tongue or under the arm to read the exact temperature of a person. If the person have more than 37°c or 98.6°f temperature Then the person is suffering from fever.

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33. Fill in the blanks.

a) The SI unit of length is meter of time is second of mass is kg

b) °C is the unit of temperature.

c) 1 metric tonne = 1000 kg / 10 quintal

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

e) The ~~temp~~ thermometer used to measure the temperature of a human body is called ~~the dinal~~ clinical thermometer.

f) The normal temperature of human body is 37°C or 98.6 °F.

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

Ans. ~~The particles of pot~~ When a crystal of potassium permanganate is placed in a beaker, purple colour spreads throughout the water because the particles of matter are very small in size, so, they are diffusing with water.

We can show that the particles of a matter

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are very small in size by an simple experiment.

Experiment: Take a beaker full of water than add 2 0 - 3 crystals of potassium permanagate. You will observe that the colour of the water is dark purple. Then take 10 ml of the Di solution and mix with another beaker of 90 ml than mix it. and again repeat the same action, you will observe that the ~~[illegible]~~ colour ~~is to~~ of the solution is being fainter and fainter but it is still pink. This shows that matter is made up of very small particle.