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சபரகமுவ மாகாண கல்வித் திணைக்களம்
Sabaragamuwa Provincial Department of Education

පළමු වාර පරීක්ෂණය - 2018 ජූලි
இரண்டாம் தவணைப் பரீட்சை 2018
First Term Test – 2018 July

11 ශ්‍රේණිය
தரம் - 11
Grade - 11

විද්‍යාව II
விணாம் II
Science II

පැය දෙකයි
2 மணித்தியாலம்
2 Hours

Part – A (Stretched Essay)

■ Answer all the questions.

01. (A) Some of facts about some of element are given below. The symbols are not the real symbols.

Re element	Melting point	Boiling point	Density	Radio activeness
A	630°C	759 °C	856	No
B	-39°C	356 °C	13534	No
C	254°C	962°C	9196	No
D	-157°C	-153°C	3.75	No

(i) Which of the above are considered to be gases?

.....

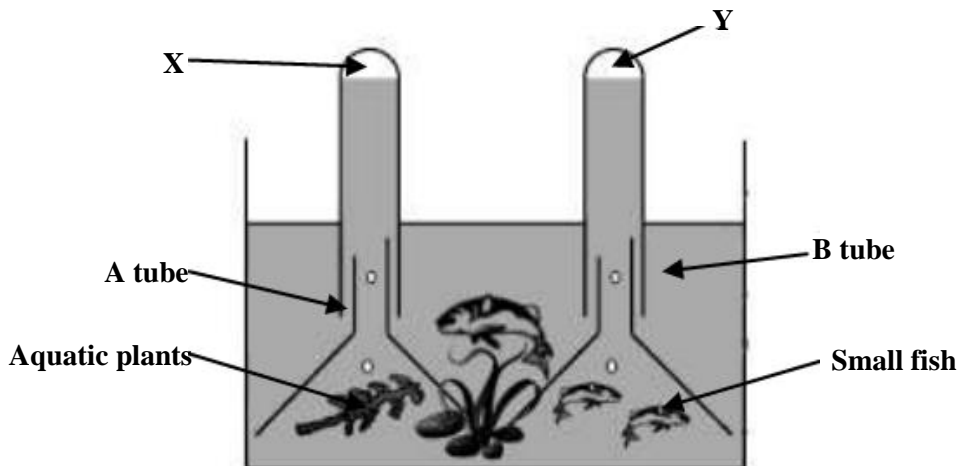
(ii) Which of the element should be stored inside a hard cover?

.....

(iii) Which of the element/elements can be existed as a liquid in the room temperature.

.....

(B) The following experiment can be done at home using a fish tank.



(i) Write one distress that can be felt by the small fish?

.....

(ii) What are the gas which are collected at X and Y.

.....

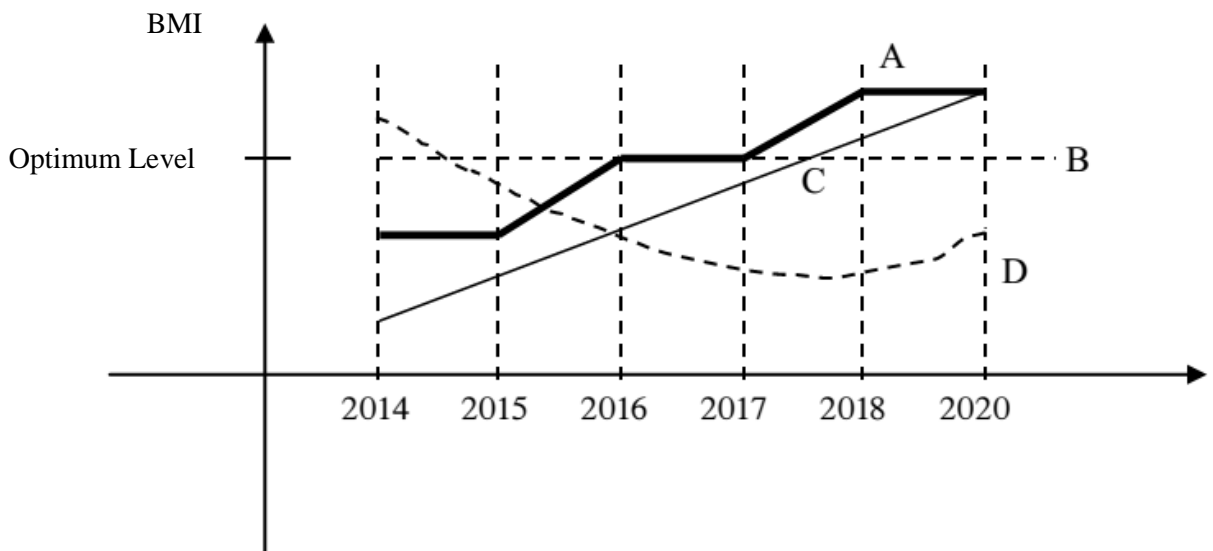
(iii) What are the main living process which responsible for the releasing of gas X and Y.

X Y

(C) The BMI is calculated by the following equation.

$$BMI = \frac{\text{mass kg}}{(\text{height} \times \text{height})m^2}$$

The following graph depicts the fluctuation of the BMI in the population of different countries.



(i) Which of the above countries have shown the most successful variation in the BMI value.

.....

(ii) Which country has paid attention mostly on the nutritional level of the people?

.....

(iii) Which is the year that the country D has taken a better decision on the nutrition of the population of the country D?

.....

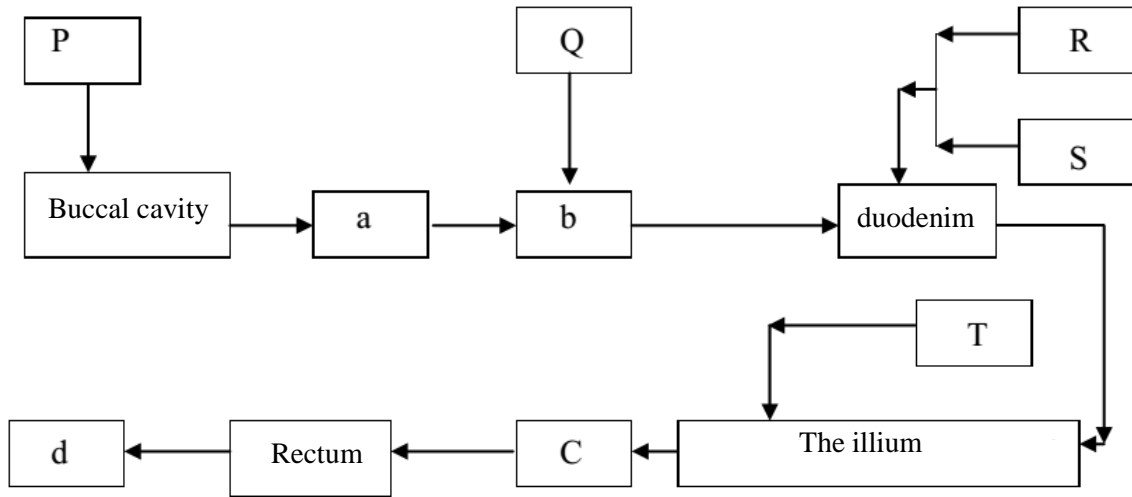
(iv) Which country shows a continuous growth of the people's nutritional level?

.....

(D)

Stretched Essay – Bio Science

02. (A) The following flow – chart resembles the organs of the pathway of the digestive system.



P, Q, R, S, T are some structures which can secrete fluids.

(i) Which is the name used to call the method of passing food through the part “a”?

.....

(ii) If the letter R indicates the Liver what will the letter S be?

.....

(iii) Which chemical change would occur in the organ “b”?

.....

(iv) Write a common name for P, Q, R, S and T.

.....

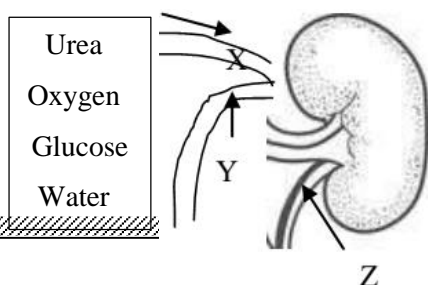
(v) What is the effect of S on blood?

.....

(B) (i) The organs are consist of tissue. Write the relevant tissue for the following organs?

Structure	Tissue
(1) The apex
(2) Calf muscle
(3) Small intestine
(4) Human skin

(ii) People show high intention about kidneys today?



X is an artery and y is a vein.

(1) Name the vessel Z.

.....

(2) The concentration of the which of the component of blood cannot be changed when it is coming to the vessel Y?

.....

(3) What is the functional unit of the kidney.

.....

(C) (i) A mixture of gases is coming to the lungs in inhaling.

Which gas is present in high concentration in the inhaling air?

.....

(iii) Which gas is present in high concentration in the exhaling air?

.....

(iii) Which of gases in the inhaling air get changed in the concentration in exchange at lungs.?.....

(D) (i) If the liquid X is water, find the up thrust exerted by the X?

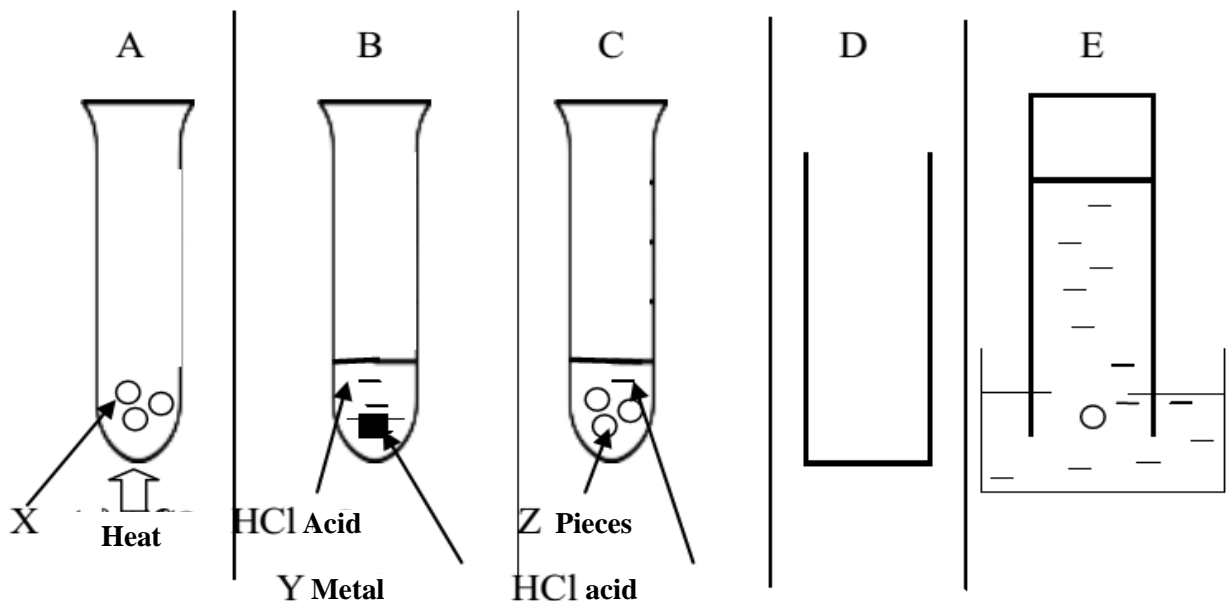
.....

(ii) Find the volume displaced by the object if it is immersed in a container filled X liquid.

.....

Stretched Essay – Chemistry Science

03. (A)



A, B and C are some setups made to produce H_2 , O_2 and CO_2 gases. (not to the order) D and E are gases collecting methods.

(i) Which of the above gases are produced in the tubes A, B and C.

A -

B -

C -

(ii) What is the suitable method of collecting the gas in the vessel B, D and E.

.....

(iii) Write the name of the chemical labeled as X.

.....

(iv) Write one tactic which can be practiced to increase the speed of the reaction in "C"

.....

(B) The normal table salt is dissolved in 3 different solvents each solvent has 50 g amount.

The mass of NaCl	The amount dissolved in the solvent rant A	The amount of NaCl in solvent rant B	The amount of NaCl in the solvent rant C
2 g	9.1 g	0.8 g	0 g

(i) In which solvent, the NaCl shows the highest solubility in the above set up

.....

(ii) Which of the effecting factor in solubility?

.....

(iii) Which of the above solvent may be water?.

.....

(iv) What is the solubility of NaCl in the solvent A?

.....

(C) Some students were about to mix equal amounts of NaCl and HCl.

(i) Write one observation of this experiments?

.....

(ii) Students wanted to identify the 2 solutions before the test. Suggest a way to identify the above 2 solutions as HCl and NaOH.

.....

(iii) Write the word equation for the reaction of HCl and NaOH.

.....

(D) There was a patch of a drop of an ink on a shirt and the science teacher had told that it was a non – polar ink.

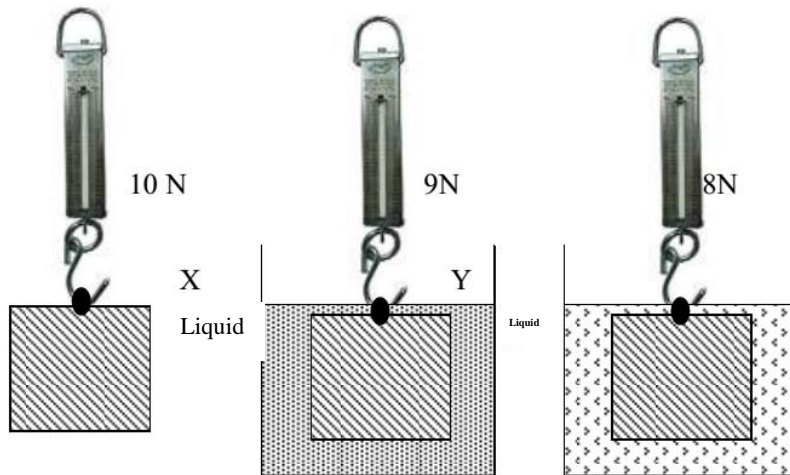
(i) Write another non polar substance you know?

.....

(ii) The ink patch – was not able to remove with water explain the reason for that?

Stretched Essay – Physics Science

04. (A)



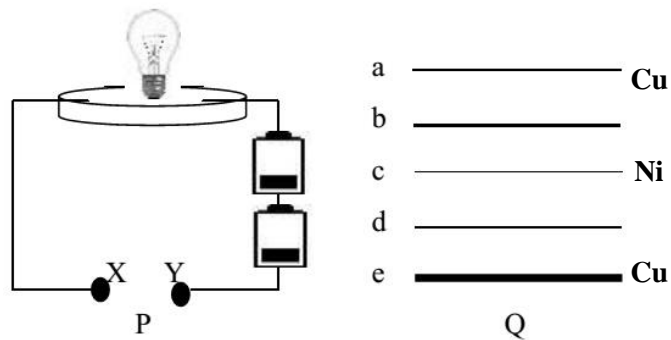
The same object is in the air, and in the liquid X and also in the liquid Y.

(i) There are different readings on the spring balances when the object is in the X and when it is in the Y. What would be the reason for this.

(ii) If the liquid X is water find the up thrust exerted by the X?

(iii) Find the volume displaced by the object if it is immersed in the fully filled liquid X.

(B) The following circuit is made to test the conductivity of conductors. The conductors in the Q are connected to X – Y.



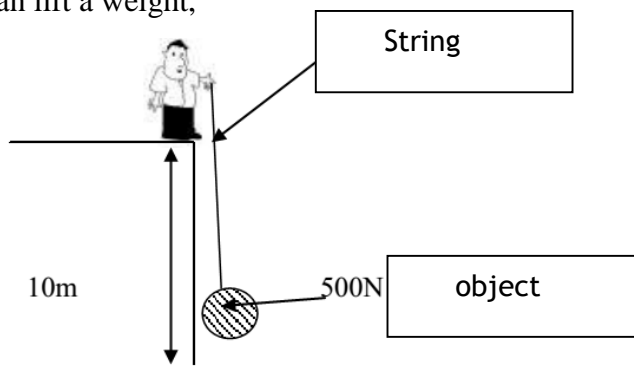
(i) When will be the highest brightness can be experienced, in connecting conductors to the X and Y.

(ii) If it is essential to produce heat energy which of the conductor will produce highest heat energy.

(iii) Which of the property of the conductors has effect on the brightness of the bulb?

(iv) One student hope to increase the brightness of the bulb using 2 conducts of type C. Draw a circuit diagram to show how they are connected to get a high brightness.

(C) The diagram shows how a man lift a weight,






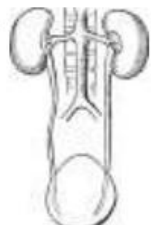
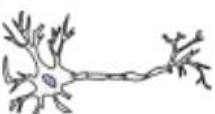

(i) Write 2 forces acting on the object at this situation

(ii) Find the potential energy of the object when it has taken to the top.

(iii) Calculate the velocity of the object falls to the ground when the object falls by cutting the thread when the object is at the top. ($g = 10 \text{ ms}^{-2}$)

Part – B (Bio Science)

05. (A) The following parts are responsible of making a living body.

<p>a</p>  <p>Leave</p>	<p>b</p>  <p>Hand</p>	<p>c</p>  <p>Smooth muscle tissue</p>	<p>d</p>  <p>kidneys and the bladder</p>
<p>e</p>  <p>neurone</p>	<p>f</p>  <p>Flower</p>		

- (i) Which of the structures in the diagram represent the basic structural unit of organisms.
- (ii) Which of diagrams show the organs of living beings?
- (iii) Which of diagram shows an organ systems?
- (iv) Name a place where “e” calls can be seen.
- (v) Arrange the above a, b, c, d, e and from simple to complex structures.

(B) The following classification is done considering of presence and the absence of times and the number of limbs of animals.

With limbs				Without limbs
2 limbs	4 limbs	6 limbs	more than 6 limbs	
human	rabbit	spider	millipede	star fish
chicken	iguana	crab		Sea antimony
				Snail

- (i) Is this a natural classification or an artificial classification?
 (ii) Write one weakness of this classification?
 (iii) Write one similarity in between the human and the chicken rather than the number of lower limbs.
 (iv) Write the classes which the human and the chicken belong to?
- human -
 Chicken -

(C) There are many chemical compounds in living bodies some of them are, Cellulose , Glycogen , Protein , Glucose , Lipids, Fructose

- (i) Which of the above chemicals are considered as sugars?
 (ii) The most of the above chemicals are considered under one group, What is that group.
 (iii) Which of the above cannot be digested and absorbed in the human digestive system body.
 (iv) Which of the above is considered as the storing from of energy.

(D) Energy is required by quantities organisms.

- (i) Which is the energy storage of a cell?
 (ii) Which of the organelle is mainly used in the production of energy in cells.
 (iii) What is the name used to the liquid which releases the nitrogenous waste with it.

06. (A) The units of measuring the quantities are important in quantifying.

Substance	Measurements	Magnitude
books	Dozans	12
spoons	couples	02
atoms	Moles	6.022×10^{23}

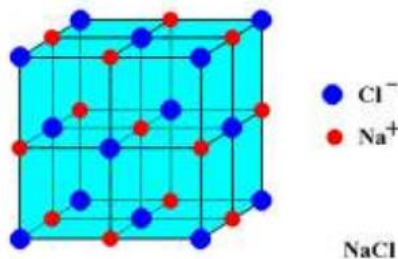
- (i) What is the mass of sulfur which should weight to obtain 6.022×10^{23} of sulfur when the relative atomic mass is 32.
 (ii) You have to measure the one molecular mass of oxygen, if the atomic mass of oxygen is 16, How much you have to weigh to obtain it?

(iii) When the sulfur is burning in the air it is reacting with the oxygen. Write the balanced equation for the above reaction.

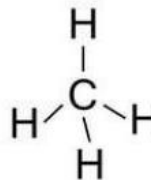
(iv) If 200 g of a piece of sulphate is burnt completely. Calculate the amount of gas produced.

(B) The below diagram shows an instances where compound are made.

a.



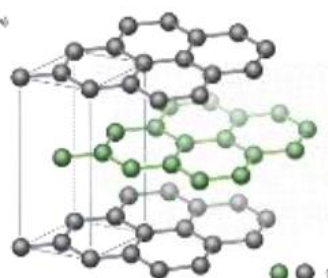
b.



c.



d.



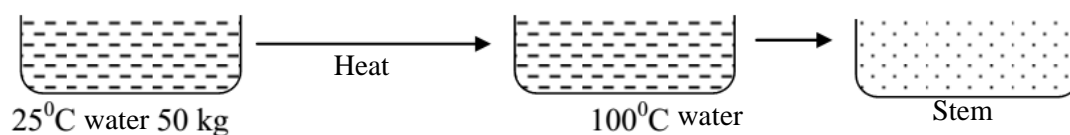
(i) Which diagram is considered to be a Lewis structure?

(ii) Which of chemicals have a lattice structure?

(iii) Which out of “a” and “d” conduct electricity at the solid state?

(iv) Write the normal physical state of the each of above compounds?

(C) The below steps are followed in a process of producing steam out of water



(i) Write the changes in the state takes place in the above steps.

(ii) Find the amount of heat needed to increase the temperature of water from 25°C - 100°C

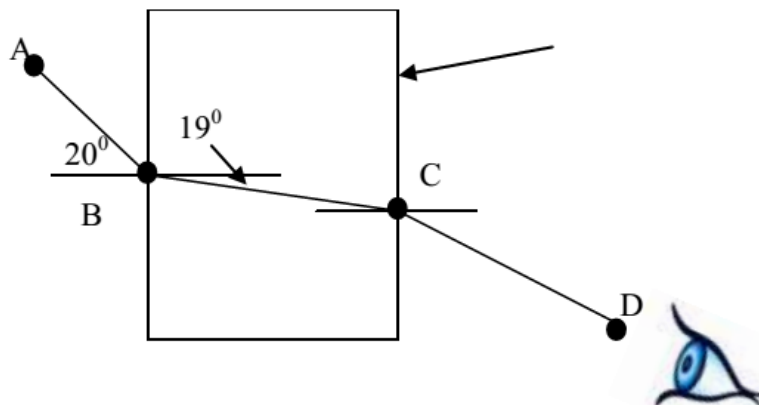
(iii) State the reason to call that energy as “latent heat”.

(D) Following electronic configuration are belong to elements but the used letters are not the real symbols.

Elements	Configurations
A	2, 1
B	2, 8, 2
C	2, 8
D	2, 8, 3
F	2, 6

- (i) Which of the above elements belonging to the 3rd period of the predict table.
- (ii) Write the formula of the compound made by the elements A and F.
- (iii) Select the element with height a metallic proportion.

07. (A) The following test has been done to test the refractive index of glass.



A , B , C and D are places where pins are fixed,

$$\sin 1 = 0.3250$$

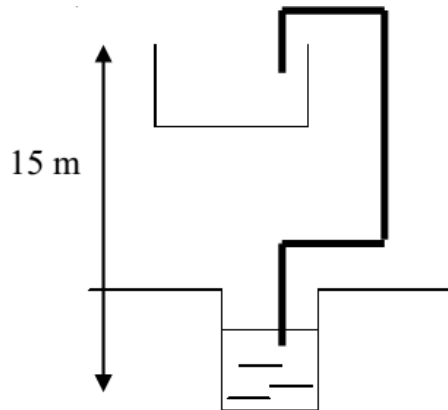
$$\sin 2 = 0.3420$$

- (i) Which is represented by the lines A – B.
- (ii) Write a formula to find refractive index.
- (iii) Find the refractive index of the glass using the above formula or any other method?
- (iv) Explain briefly the method of placing pins in C and D.

(B) A bus was travelling on a liner road with children inside it. On the journey the children inside the bus were moved back at a time of starting and after that the children remained without moving, then they were moved in front when the bus moves. Again children moved back when the bus is stopped.

- (i) Write the type of motion of the bus at below instances.
 - (a) When the children are moving in front –
 - (b) When the children stays without moving –
 - (c) When the bus is stopped –
- (iii) The meter of the bus gave to reading of 60 kmh^{-1} , the reading existed 20 minutes find the distance moved within that time,
- (iv) If the mass of the bus is 2000 kg find the Force needed to move the bus with 2 ms^{-2} ?
- (v) Explain why the fuel consumption is economical in long rides than in short rides

(C)



The diagram shows the way of the filling a tank with the height of 15 m. ($g = 10\text{ms}^{-2}$)

- (i) Which energy of water is increased when it is filled.
- (ii) The motor takes 100 seconds to fill 1000 kg of water,

- (a) Calculate the work done by the motor,
- (b) Calculate the power of the motor

08. (A) The follow pictures depict some cells to the reproducer

- a. sperm
- b. ovule
- c. pollen
- d. blastocyst
- e. zygote

- (1) Which of the above are haploid?
 - (i) Which of the cells are important in making the zygote,
 - (ii) What is the name given for the process of embedding the blastocyst in to the endometrium.
 - (2) The genetical factors are transferred from generations to generations.
 - (i) What is the name used to the above process
 - (ii) The letter T indicates the dominant gene to mark the thalassemia
- (a) What could be the genotype of the a healthy person
 - (b) What is the probability of having a diseased kids when the both of parents genotype are Tt.
 - (c) Write the sex – link disease in human.

(B) The following things are given for an experiment.

- (a) sea water (b) cinnamon leave
(c) Crude oil (d) well wattle.

- (i) Write a common name used for all the above chemicals.
(ii) To separate which of the above that we can use the steam distillation.
(iii) Which of separation method can be used to obtain distilled water from the well water.
(iv) What is the advantage of having a mixture of water and cinnamon oil in the extraction of cinnamon oil.

(C) The following elements are in the second period of the periodic table?

Li, Be, B, C, M, O, F, Ne

- (i) Write one property which increase to the directions shown by the arrow.
(ii) Write how the pH of the oxide of the above elements change to the given direction.
(iii) Which of the property shows the highest value in carbon.

09. (A) The following materials and the quantities were used by 4 groups of students to sent balloons up.

	A	B	C	D
The amount of water used to dissolve 50 g of NaOH	100 ml	50 ml	40 ml	20 ml
Amount of Al piece	20 g	20 g	20 g	20 g

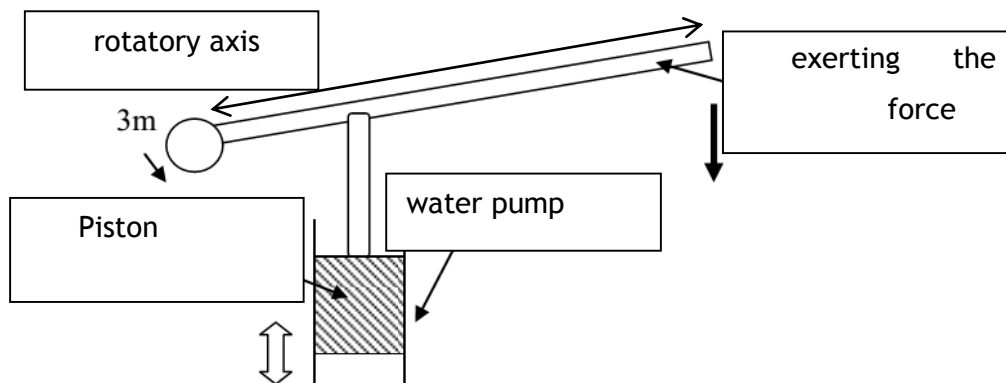
- (i) What is the gas evolved in this reaction.
(ii) Calculate the concentration of the reaction mixture of the group B.
(iii) If this experiments is used to measure the rate of a reaction which of the effecting factor is tested here.
(iv) Which group can fill the balloon quickly?

(B) 0.1 mol dm^{-3} HCl and 0.1 mol dm^{-1} NaoH solution were add together. The test tube get heated.

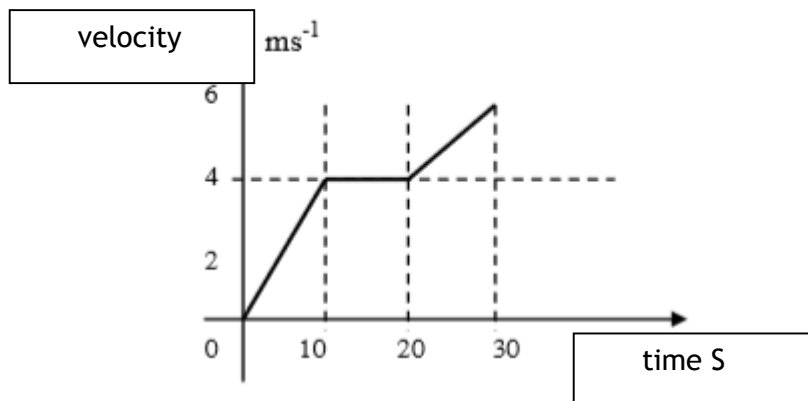
- (i) What type of a reaction it is?
(ii) The mixture turned in to a pink colour when the phenolphthaline is added to it. What can be concluded by that.
(iii) Which of the above solution should be added to the mixture to remove the pink colour.
(iv) If a person is suffering from gastritis what type of a medicine should be given?

(C) The diagram shows a lever which uses to take water up.

- (i) Write suitable substance to make the piston.
- (ii) If the 10 N force is essential for the function of the lever find the moment of force around the rotatory axis.
- (iii) It is essential to increase the number of moments of the piston. Should the piston of the pump bring closer the rotating axis or to take away from it?
- (iv) What might be the reason for the occurrence of a sound and what can be done to reduce the sound.



(D) The following velocity – time graph is for an event of a student.



- (i) What is the maximum velocity that the student had reached at the end of the event.
- (ii) Which velocity has been maintained by the students during the motion.
- (iii) What is the total distance of the motion.

