

<div style="border: 1px solid black; padding: 5px; text-align: center;"> බස්නාහිර පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව Department of Education - Western Province </div>					
පළමු වාර ඇගයීම - 2019 First Term Test Evaluation - 2019					
ශ්‍රේණිය 11 Grade	විෂයය විද්‍යාව Subject Science		පත්‍රය 11 Paper		කාලය පැය 03 Time 03 Hours

Name -

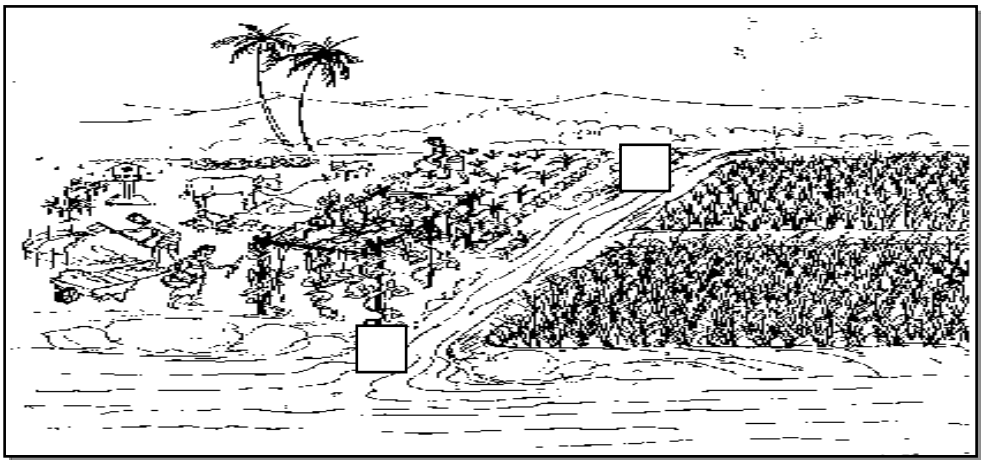
Introductions (

- ❖ **This paper consists with A and B parts.**
- ❖ **Answer the questions in part A in the spaces provided.**
- ❖ **Answer any three questions from part B.**
- ❖ **Each questions in part A allocates 15 marks and 20 marks for each question in part B.**
- ❖ **Attach the answer script of part B with part A before submitting the paper.**

Part

01.

Figure given above illustrates a reservoir and a paddy field located close to a farm. The reservoir is enriched



with water that floes close to the farm. Water in the reservoir is used for cultivations.

A (1). Write a food chain with three link present in associate with the reservoir.

.....

(2). Water in the reservoir has converted to green colour. Name the type of organism that grows in high.

.....

(3).Name the main nutrient collecting to the soil due to releasing organic waste of the farm to the paddy field.....

(4). Name the deficiency symptom of the plants due to lack of that nutrient.

.....

B (1) Farmers said that a species of caterpillar migrating to the paddy field damage to the paddy cultivation .

Name the group of animal that the adult of caterpillar belongs.....

(2) Name two morphological features of above animal that is used to group to the above animal group.

.....

(3) It was discovered that use of pesticides excessively for the control of caterpillar affects the reduction of harvest in vegetable cultivations. State the reason for this briefly.

.....

(4) Write down the energy transformation when following water in above figure From X to Y

.....

C Following figure indicates the incomplete setup prepared by a student for testing byproducts of photosynthesis using aquatic submerged plants grow in shallow area of the above reservoir.

(1) Complete the faults of the setup.

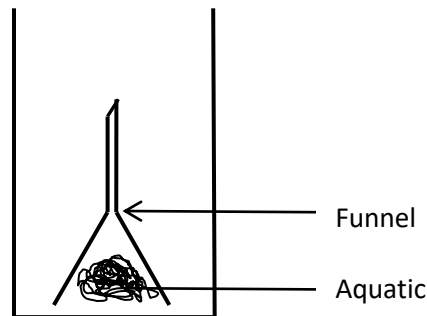
(2) Name the byproducts formed when receiving light well to the setup.....

.....

(3) The rate of releasing the by product was reduced after some time If the sunlight received well. What is the reason for this?

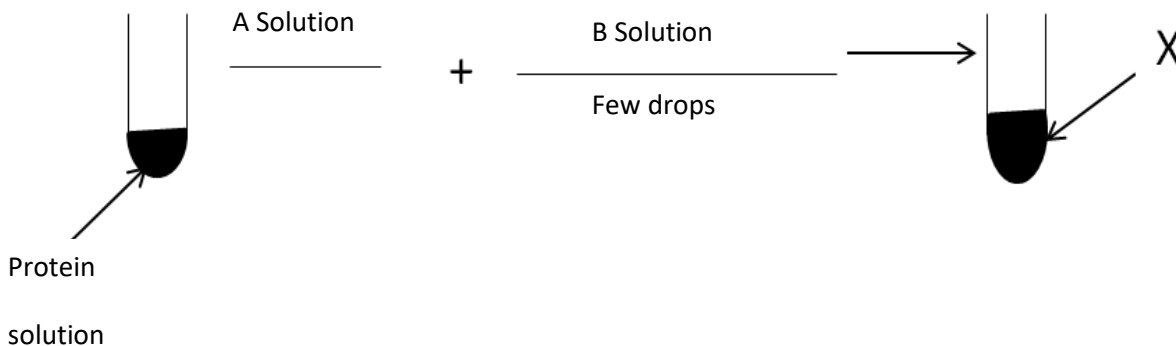
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02

A, A few steps of an experiment of a food test is given below



(1). Name the chemical substances indicated as A and B

A B.....

(2). Write the colour of the X solution when A and B solutions are added.....

(3). What is the building unit of proteins?

B The scientific experiments were carried out using garden pea plant.

- (1) Name the scientist who discovered about heredity by the experiment done by using garden pea plant
- (2). Write two reasons for use of garden pea plant for his experiment.
- (3). Write the phenotype of F_1 generation that received crossing the plant of breeding long pods and pure breed short . (use **L** for long pods and **l** for short pods).....
- (4). Fill the punnet square relevant to the crossing of two plants of F_1 generation.

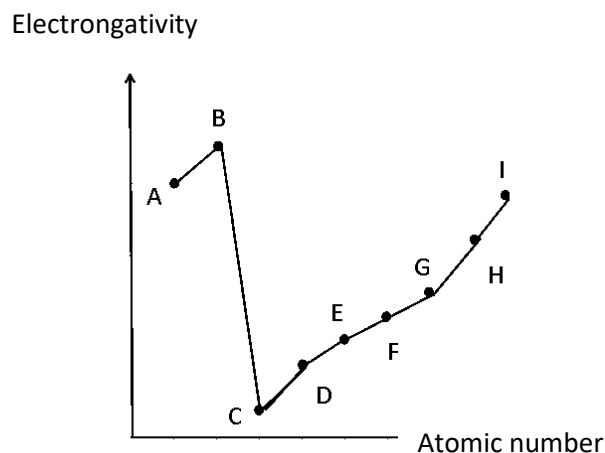
	L	l
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C Building unit of organisms is the cell.

- (1) Write two information in cell theory.
- (2) How a prokaryotic cell is differentiated from a eukaryotic cell.
- (3) What is the common name for sum of chemical and physiological activities take place in a cell.

03.A

The graph given above indicates the change of electronegativity with atomic number of a few adjustment elements of second and third periods of periodic table.(The given symbols are not the standard symbols. Answer using these symbols)



- (1) Identify B and D elements and mention them by using correct symbols.....
- (2) Name the element from the graph having minimum first ionization energy.....
- (3) Write the formulae for the compound formed by reacting A and E elements.
- (4) C and D are belongs to same period. What is the reason for that
- (5) State two applications of element H

B (1) Some metals extract through reduction method .Name two raw materials which is adding to the top of the blast furnace when iron is extracted.

(2) Incomplete two reactions occur in the blast furnace are given below. Name X and Y of it.



(3) Calculate the number of iron atoms contained in 28 g of iron. (Fe = 56).....

(4) Write a compound contained in the slag formed in extraction of iron.

04 A

The diagram indicates the setup of pressure water function prepared by a student for exhibition. As soon as the B end of YB tube is connected to the sucker

And operate it, B end is immersed in the water vessel.

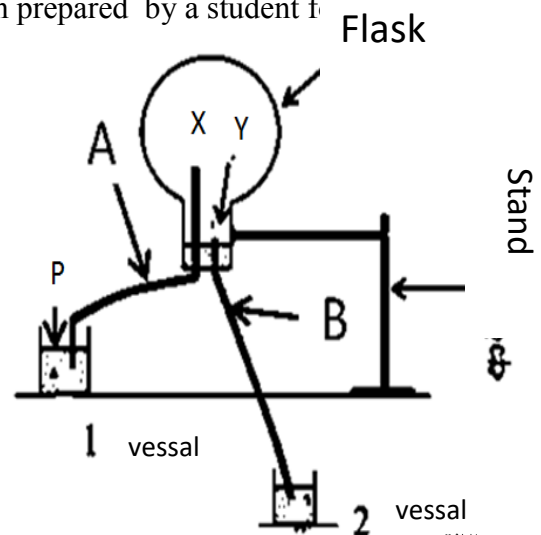
(1) Indicate the direction of water flowing in A and B tubes using arrows.

(2) In which end from x and y that the water fountain is created.

(3) What is the effected value of surface P on the sea level when the water fountain is activated.

(4) Which is expected by adding coloured water to the 1 vessel

(5) Explain briefly the way of formation of this water fountain.....



B (1) Calculate the pressure created on the bottom of the 2 vessel when water is filled up to 50 cm. (Density of water is 1000 kgm^{-3} , gravitation acceleration is 10 ms^{-1})

(2) A ball that fallen to 2 vessel and floats on water. Indicate the way of creating forces on the ball in that instance using a diagram.

(3) State the principal of Archimedes regarding floating an object.....

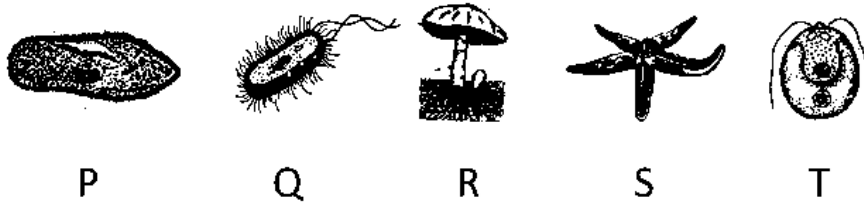
(4) What is the standard instrument used to measure the density of a liquid with the help of Archimedes principle.

C (1) When this ball was fallen to the water, a wave was created in the water. To which type of mechanical Waves it belongs?

(2) Write the feature of electromagnetic wave that is differentiated from mechanical waves.

Part B

05. Rough diagrams of some organisms are given below. Answer the questions by referring the diagrams given below.



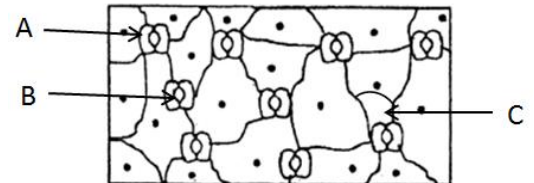
- A
- (1) Write the relevant domains of G and S organism respectively.
 - (2) Write two letters of relevant organisms that participate in the formation of lichens.
 - (3) Which letter represents the photo autotrophic organism ?
 - (4) Which letter presents the organism that has evolutionary relationship with phylum Chordata ?
 - (5) Write one special feature in the body of above (4) mentioned organism.

B An organism that genetically identical to the mother plant is known a clone.

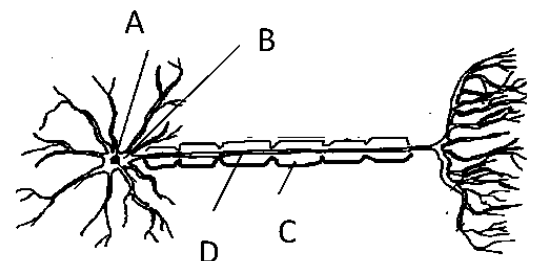
- (1) Which artificial vegetative propagation method is widely used to obtain clones of potatoes ?
- (2) Name the nutrient that should be included in the culture medium.
- (3) Write one advantage of this vegetative propagation method.

C The diagram given below shoes the lower epidermal cells observed through the light microscope.

- (1) Name A and B of above diagram?
- (2) What is the function of B ?
- (3) Name the organelle that present in A , But absent in C and write the special process perform by that organelle.
- (4) Write above process in a balanced chemical equation.
- (5) Write the name of tissue that transport water for the above process and write one type of cell present in that tissue.
- (6) A diagram of very important cell found in the body of vertebrates is given below.

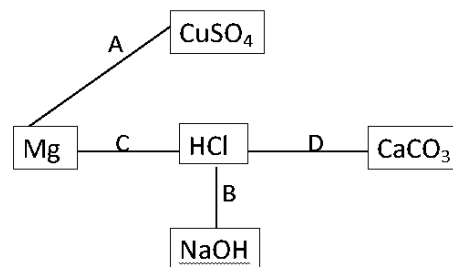


- (a) What is the name of above given cell?
- (b) Name a , b , c and d in above diagram.
- (c) What is the use of covering of D by C



06. The diagram shows some reactions take place between the magnesium metal and the solutions as well as reactions among th solutions. These reactions are named as A ,B , C and D

- (1) Write the letter of relevant reaction which emits the gas that turns the lime water in to milky colour.
- (2) Which letter represents the reaction that produce hydrogen Gas?
- (3) Which solutions will produce a salt and water as products, When they react ?
- (4) A reddish brown colour precipitate was deposited during one of the above reaction.



- (a) What are the reactants of that reaction?
- (b) Write the balanced chemical equation for that reaction .
- (c) According to the nature of chemical change , to which type of chemical change does it belong?
- (d) Write two strategies to increase the rate of reaction of that reaction.

B Ammonia gas is produced by reacting hydrogen with Ammonia. Ammonia is very important for the production of fertilizer.

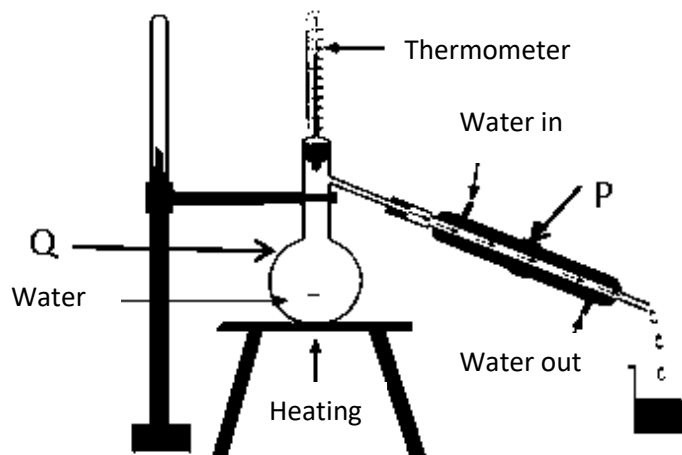
- (1) Draw a lewis dot cross diagram of Ammonia.
- (2) What type of chemical bonds exist in ammonia

C 44 g of carbon dioxide is dissolved in 360 g of water under high pressure.

(C = 12 , O = 16 , H = 1)

- (1) Calculate the number of water moles in the mixture.
- (2) Calculate the number of CO₂ moles in the mixture.
- (3) Express the composition of water as a mole fraction.
- (4) Which type of mixture is this?

D One of the method of separating components in a mixture is shown in the diagram.

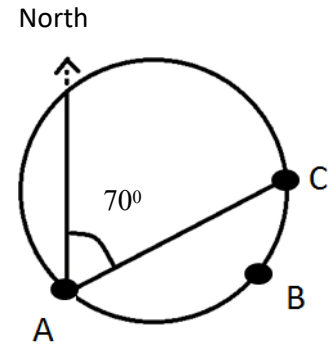


- (1) Write the name of the separating method shown by the diagram.
- (2) Write the name of P and Q equipment.
- (3) Write one application of the method.

07. A. ABC is a running track with a length of 200 m .AC is a linear running track with a length of 100 m.

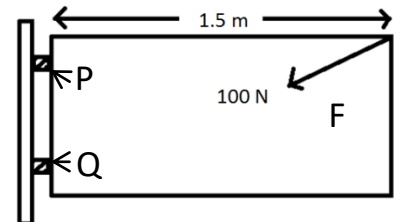
- Student X started the race at point A and took 25 s to run 200 m through he point B
- Student Y startd the race at the same time from the point A and took 20 s to reach point C straghtly

- (1) Calculate The average speed of X.
- (2) What is the displacement of Y?
- (3) Calculate the velocity of T ?
- (4) Plot the velocity – time graph for the motion of Y.
- (5) Calculate the momentum of Y. if his mass is 50 kg.



B. The diagram given below shows the way that a student applied the force to open a gate.

- (1) Calculate moment of the force effect on point P.
- (2) Write one strategy can be applied to reduce the fraction of P and Q
- (3) State common feature of couple of forces.
- (4) Motion of a tyre due to applied force is shown in the diagram. Mark the place that friction is acting on the tyre in a rough diagram on your answer sheet



C The way that the forces are acting on two objects are shown in the diagrams given below.

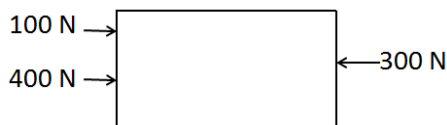


Diagram 1

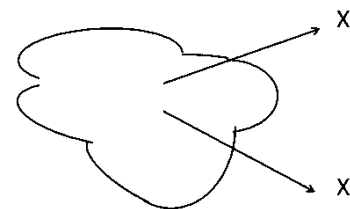


Diagram 2

- (1) What is the resultant force acting on the object in diagram 1 ?
- (2) The diagram 2 shows the way that two angular forces are acting on an object. Mark the direction of the resultant force on the drawn diagram on your answer sheet.
- (3) Give one example for an object stay in equilibrium under 3 forces.

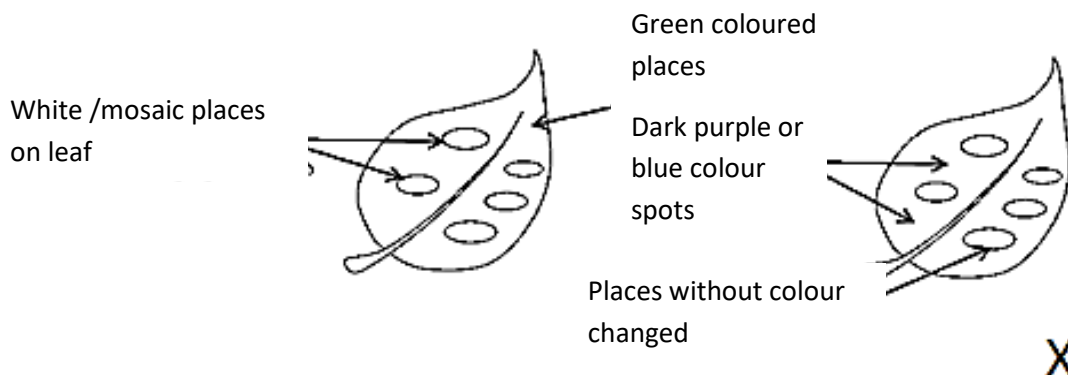
08 A Group of cells with a common origin that has been modified to perform particular function in the body
Is known as a tissue.

- (1) Name te tissue given in the diagram .
- (2) Name A and B .
- (3) Write a common feature of this tissue.



(4) Write a function done by this tissue.

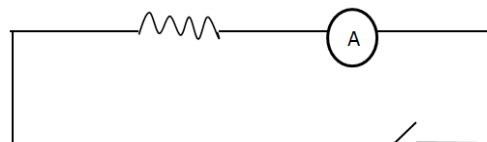
B Given below is a diagram of the results of an experiment conducted by grade 11 students.



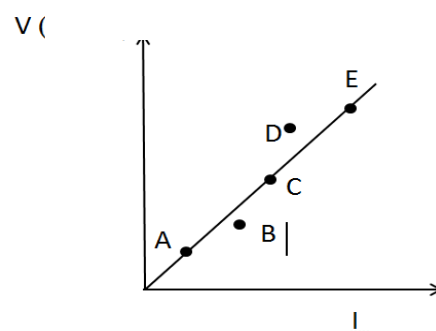
- (1) What is the objective of this experiment?
- (2) Write the solution used for starch test and the colour received
- (3) Name a plant leaf that can use for the above test.
- (4) Write two steps that should follow to obtain above observation shown in leaf X in the diagram.

C An incomplete circuit diagram of an experiment that arranged by a student using a Nichrome wire coil, a volt meter, an ammeter, a rheostat and 4 dry cells, to check the accuracy of Ohm's law in given below.

- (1) Draw the completed diagram of this circuit on your answer sheet?
- (2) What do you expect from the rheostat in the circuit.
- (3) The student plot the graph among potential difference and current by using data in 5 different instances.



- (a) Write the relationship between current and potential difference in a circuit.
- (b) Data for B and D are away from the other data. Write an experimental error that could lead to the deviation of A and B
- (c) Suggest a method to avoid above mentioned error.
- (4) You are provided resistors with $10\ \Omega$, $3\ \Omega$ and $2\ \Omega$. Draw two diagrams to obtain equivalent resistance of $5\ \Omega$ by using above resistors.

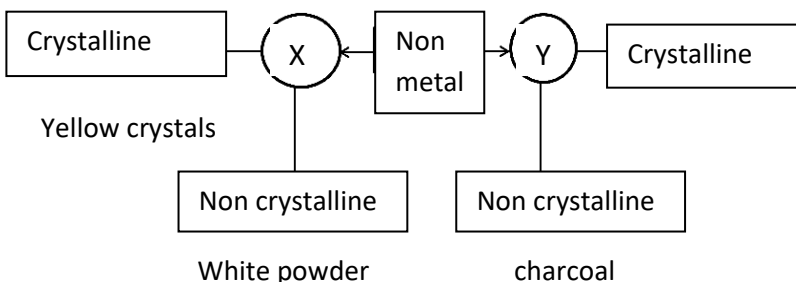


09 A A student decided to use the reaction between Magnesium and water to measure the rate of reaction

- (1) What is the precaution should be taken before measuring the mass of magnesium?
- (2) Why is hot water used for the above reaction?
- (3) It is suggested to collect the gas emitted during the reaction between magnesium and water by using downward displacement of water. What is the reason?

- (4) Write another method to collect that gas .
 (5) Is that solution resulted by the reaction acidic or basic?

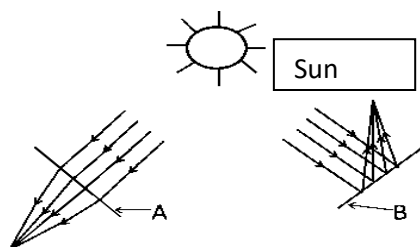
B A diagram given below shows allotropes of 2 non metallic elements.



- (1) Name x and y by using above information.
 (2) What is the insulated crystalline allotrope of Y
 (3) Write an observation can be taken, When piece of X is burned in air.
 (4) When ignite charcoal in high temperature , It creates CO₂ by react with oxygen. Write the relevant Balanced chemical equation for that.

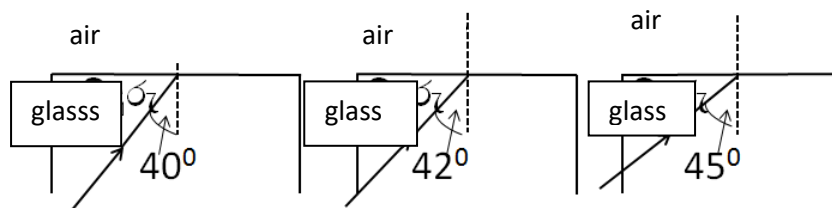
C (1) State the Snell 's law of refraction

- (2) Given below diagrams show the thing happened to the light rays of the sun, When light rays fall on two optic instrument



- (3) The critical angle of glass is 42°. Copy the diagrams given below and complete the ray diagrams

Accordingly



D (1) To which group belongs to the musical instruments given below .

Drum , udakkiya , Rabbana , dawla

- (2) The different strings of the violin produce different pitches even though strings having same tension. What is the reason for that?
 (3) How does the frequency change when the length of vibrating string decreases.