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Department of Education - Western Province

පළමු වාර ඇගයීම - 2018
First Term Evaluation - 2018

| ශ්‍රේණිය Grade | 10 | විෂයය Subject | **Science** | පත්‍රය Paper | ll | කාලය Time | 03 Hours |

Name:- ………………………………………………………..

**Instructions:**
- Answer all (**four)** questions in Part **A**, in the space provided.
- Answer **three** questions in Part **B**.

## Part A - Structured Essay

(01) (A) It is essential for passengers to wear seat belts while travelling in vehicles. It provides safety for the passengers while travelling.

1. How does it provide a protection by wearing seat belts?

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2. Which law can be used to prove the facts mentioned above ?

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3. State one fact among the facts included in that law.

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(B) You will get an opportunity to observe a peel of an onion in grade 10.

1. Why is it needed to put a water drop onto the onion peel, before the observation?

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2. Name the 2 parts of the cells of the onion peel which were most clearly observed by you.

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3. Name an equipment which is used to transfer a separated specimen on to a slide.

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4. Who was the scientist first to observe cells? ………………………………………………………………

(C) A certain non metal in the laboratory burns with a blue flame.

1. What is that non metal? ………………………………………………………………………………………

2. State another observation other than the observation mentioned above

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3. Write a physical property of the non metal you name above.

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4. Magnesium is a metal. Write 2 metallic properties of magnesium which can be used to classify it as a metal.

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(02) (A) Recall the activity carried out by you to observe the activity of amylase enzyme on starch.
   1. What is the reagent that uses to identify starch?

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   2. State the colours of the reagent before and after the starch test?

   Before ……………………………………………                   After  ……………………………………………

   3. What is the purpose of using a filtered solution of ground germinating seeds in the above
      activity?

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(B) Weakening of bones and teeth, anemia and cramps are prevailed as symptoms of a certain
      patient.
   1. Deficiency of 2 minerals affects the weakening of teeth and bones. Name these 2 minerals

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   2. Which condition is known as anemia?

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   3. Deficiency of a mineral causes frequent cramps. What is the substance that needs to be
      added to the food to get that mineral the most?

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   4. Name the 2 minerals of which contain the highest amount of the total weight of minerals in
      the human.

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(C) The following set up was prepared for the identification of water as a constituent in a food.



   Glass sheet

   Powderd food sample

   Crucible

   tripod

   Burner
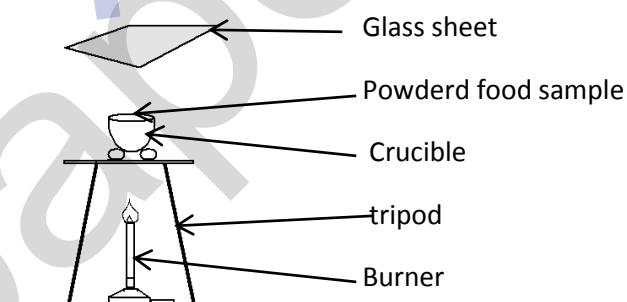
   1. Why is a crucible used to heat the food sample?

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   2. What is the reason of holding a glass sheet above the crucible?

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   3. What is used to place the crucible on the tripod?

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   4. Name the chemical used to identify water in this experiment.

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(03) (A) According to the chemical composition matter an be separated as pure substances and mixtures.

1. Describe pure substances?

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2. Mixtures are of 2 types according to the existing nature. Name the 2 types of mixtures and give an example for each type?

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3. Name the groups that matter can divide according to the physical nature.

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(B) The existing number of electrons in shells of an atom of an element is shown in the following chart

K – 2

L –☐

M –☐

N – 32

1. Write the numbers relevant for the above 2 cages.

2. In the school you had an opportunity to make models of atoms.

a) Name 2 types of materials that you used there.

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b) Which part of the atom did you illustrate by the above 2 substances

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(C) 1. Who was the first person to introduce the modern periodic table?

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2. A table drawn for the first 20 elements by a student is shown below.
The science teacher showed that there are 2 errors in the table what are the 2 errors

i
ii
iii
iv

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(04) (A) A ball bearing is used on a strategy in various machinery, vehicles and presently is associated with sport items.

1. What is expected by the usage of ball bearings?

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2. Write 2 other strategies other than inserting ball bearings in relation to the answer given in question (1)

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(B) A trolley placed on a horizontal surface being dragged by a rubber band is shown in the diagram. Holding from the point A with one hand, stretch the rubber band to point B with the other hand. By keeping the rubber band in a similar manner, release the trolley from the point A.
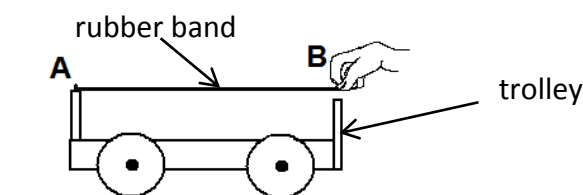


1. At that time which type of motion occurred in the trolley?

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2. If 2 rubber bands were used and the activity was repeated, what will happen to that motion?

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3. Which scientific law is proved by the above activity.

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(C) A person starts from a point "P" and walks 300 m to the east to reach the point "Q". Then from that point "Q" he walks 400 m to the north to reach point "R"

1. Sketch the information given above in the space provided according to the scale (scale 100m = 1cm)

2. What is the total distance traveled by him?

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3. Calculate his displacement using the scale diagram you draw in the question (1).

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**Part-B Essay**

(05) (A) Carbohydrates are the most abundant organic compound. These compounds can be classified into 3 groups according to the way they are formed.

1) Name the 3 main groups of carbohydrates that can be classified in to and give an example for each group.

2) X is a compound relevant to one type of carbohydrate you mentioned above. When a certain reagent is added to a tube containing X and heated , a series of colours would be observed.

a) What would be X?

b) What is the reagent added to X?

c) What is the last colour of the colour series that was observed?

4

(B) The highest proportion of the body mass of a living organism is composed of water which is an inorganic compound.

1) Which fraction of body weight of organisms is by water?
2) How is the solvent property of water mainly useful for aquatic animals?
3) Which property of the water is helpful to transport water to the upper parts of the plant?

(C) Vitamins are a type of organic molecule found in organisms.
1) State 2 roles of vitamins.
2) Write 2 water soluble vitamins.
3) Name the vitamin important for the following .
   a) Blood clotting.
   b) Absorption of calcium and phosphorous.

(06) (A) The following graph shows the electro negativity of some consecutive elements. These elements belong to the second and third periods of the periodic table. (Given symbols are not true symbols.)
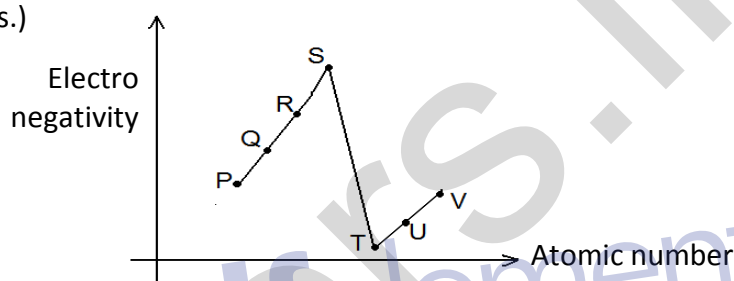


1) What is meant by electro negativity?
2) Which group contain above element " S"?
3) Elements in which group are not found in the above graph?
4) Name 2 gaseous elements from the elements shown above.

(B) You have to study the pattern of first ionization energies among the patterns seen in the periodic table.
1) Define first ionization energy in brief.
2) How does the first ionization energy changes from top to bottom of a group.
3) From the first 20 elements name the 2 elements which have the highest and lowest first ionization energy respectively.

(C) 1) Write 2 observations of magnesium when heated in air.
2) Which 2 elements mixed to produce the alloy called magnelium?
3) Write separately the reasons in brief using there valences, Why the chemical formula of $H_2O$ and NaCl are written as they are?

(07) (A) Among the new year games climbing the slippery pole takes more time.
1) Why does it take more time?
2) What is the substance applied on the slippery pole?
3) Mention the opposite forces and lengths acted when the player slipping down the pole.
4) Name the common scientific phenomenon regarding the games pulling ropes and climbing of slippery pole explain with reasons.

(B) The following activity was done by a student using a few blocks of wood and a Newton balance. The readings were taken just as the blocks started to move.



(a)                    (b)
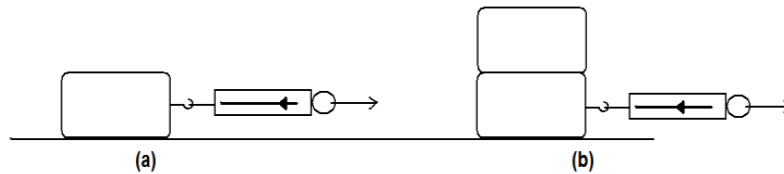
1) From the above activity what factor was expected to demonstrate regarding friction?
2) What can you say about the readings of Newton balance in above (a) and (b) instances?
3) Other than the factor mentioned above what is the other factor which affects friction?

(C) A velocity time graph for motion of an object is shown below.
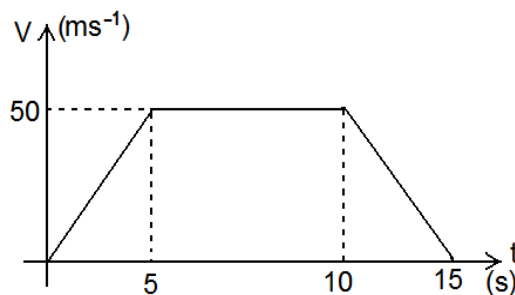


1) Write the nature of the motion of this object in 3 steps.
2) Calculate the acceleration of the object.
3) Find the total distance traveled by the object.

(08) (A) Cells have the ability to grow and multiply its number. The cells multiply by cell division
1) What is known as cell division?
2) What organelle should divide first in the cell division of an eukaryotic cell?
3) a) What are the 2 methods of cell division?
   b) Write an example for each of the cell divisions mentioned above.

(B) The momentum of a moving body is a measure of how difficult it is to stop the motion of that body.
1) Name 2 factors that the momentum depends on.
2) Assume that the following objects were thrown with the same velocity separately.
   a) Shot put      b) Tennis ball      c) Leather ball      d) table tennis ball
   Arrange the objects according to the momentum gained in ascending order.
3) Is momentum a vector quantity or a scalar quantity?

(C) The movement of a child travelling from his home to nearby shop and returning back home is shown here.



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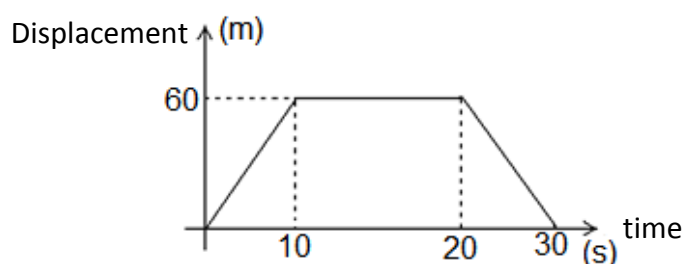
1) What is the distance from his house to the shop?

2) What is the time that the child spent in the shop?

3) Sketch a velocity – time graph for the above motion.

(09) (A) Nitrogen is the constituent that contains the highest percentage in the earth's atmosphere .

1) What is the percentage of nitrogen in the atmosphere?

2) In which state does nitrogen exist in the atmosphere?

3) Write 2 physical properties of nitrogen

4) Due to which property of nitrogen is it used to fill electric bulbs?

(B) 1) There is a relationship between the electronic configuration of an atom of an element and its position of the period and the group in the periodic table. Explain this using an example.

2) The symbol of a certain element was given below.

$$_{Z}^{A}X$$ what is denoted by A and Z here?
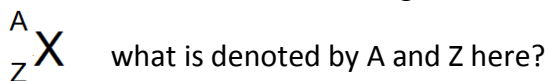
(C) 1) Give one word to describe the rate of change of displacement

2) What is known as acceleration?

3) "32KMPH" was marked on a back of a vehicle. Write the meaning of it and name the correct unit.

4) An athlete runs $4\frac{1}{2}$ circles with a distance 200 m running track. He took 5 minutes to run this distance.

    a) What is the total distance that he travelled?

    b) What is his mean speed?