

Education Zone - Kelaniya

Second Term Evaluation - 2017

Grade 9

Science **I, II**

Time :2 hours

Name :

Answer all the questions.

Select the correct or most suitable answer and underline it.

1. A standard system is used to symbolize elements internationally. According to that system, which symbol is used to denote Potassium?

1. P 2. Ca 3. Po 4. K

2. Bronze is an alloy which is used abundantly. It consists of elements,

1. Copper, Iron, Tin
2. Tin, Copper, Lead
3. Iron, Tin, Lead
4. Zinc, Copper, Tin

3. Many foods contain sugar. Which type of sugar is containing in milk?

1. Lactose 2. Maltose 3. Glucose 4. Sucrose

4. Out of the parts given below, which part can be seen in the light system of every light microscope?

1. Condenser
2. Body tube
3. Light source
4. Eye piece

5. In compost production, the pair of things which are added to maintain the ratio of Carbon and Nitrogen (C: N) are,

1. Urea and rice Husk 2. Urea and Gliricidia leaves
3. Gliricidia leaves and saw dust 4. Hay and saw dust

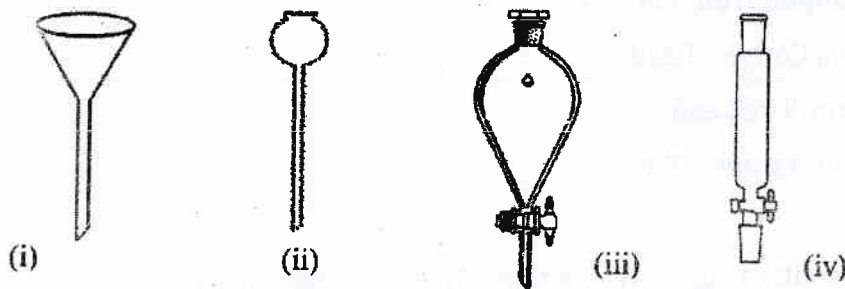
6. Potassium permanganate crystals were powdered and put into a boiling tube. It was heated for some minutes and water was added into it. What can be your observation?

1. A colourless solution
2. A purple colour solution
3. A green colour solution
4. A blue colour solution

7. What is the date that cuts the equator from North to South, when the apparent path of the sun occurs in an ecliptic?

1. March 21st 2. Sep. 23rd 3. March 23rd 4. Sep. 21st

8. Which equipment is used to separate two immiscible liquids?



9. Pay your attention to the machines given below.

(a) claw-hammer

(b) nut-key

(c) pile driver

Out of these, which can be seen in a construction site?

1. Only a 2. b and c only 3. a and b 4. Only a and c

10. Select the correct statement out of the following statements.

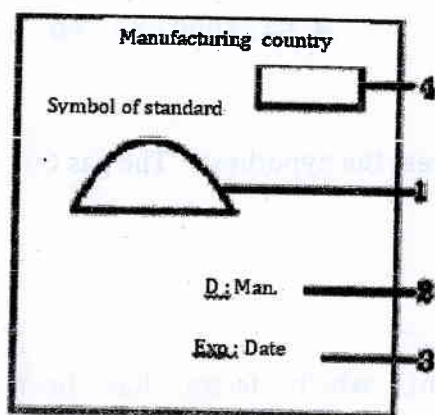
1. Primary energy sources can be obtained by transforming secondary energy sources.
2. Super-heated steam contains a very high temperature and pressure.
3. When producing hydroelectricity potential energy of water is directly transferred into electric energy.

4. Crude oil and bio mass are secondary energy sources.

11. What can be your observation, when some Magnesium strips were placed in a beaker containing Copper sulphate solution?

1. Gives off a brown colour gas.
2. Having a very bad smell.
3. Depositing a brown coloured thing at the bottom of the test tube.
4. No colour change in the solution.

12. Which factor should be considered least when buying a quality product?



1. SLS symbol
2. Date of manufacture
3. Date of expiry
4. Country of production or organization

13. What is the gas, banned by law, that destroys the Ozone layer which is used in refrigerators and aerosol products?

1. Gas Sulphur Dioxide
2. Methane
3. Chloro Fluoro Carbon
4. Nitrogen Dioxide

14. Which natural polymer is used in everyday life?

1. Poly ethylene
2. Cellulose
3. Poly Vinyl Chloride
4. Nylon

15. Homogeneous and heterogeneous mixtures are used for different things. Out of the mixtures given below, what is a heterogeneous mixture?

1. Sugar solution
2. Salt solution
3. Conjee
4. Vinegar

16. The element "X" is yellow in colour. A non-metal. When burned in air, burned with a bright blue flame and gave off a gas. Which element can be "X"?

1. Carbon
2. Magnesium
3. Iron
4. Sulphur

17. What is a property of a non – metal?

1. Density is relatively low.
2. Ductile
3. Shiny on the surface
4. Good electric and heat conductors

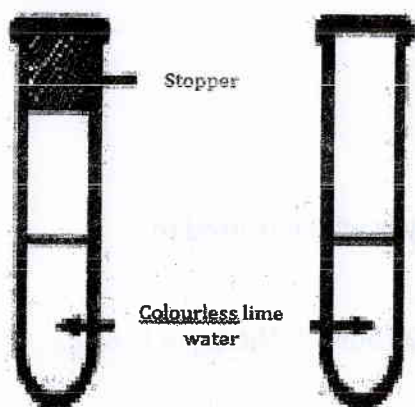
18. In Ocean Thermal Energy Conversion (OTEC), which gas is used as the heat transmitter?

1. The gas Hydrogen
2. The gas Nitrogen
3. The gas Ammonia
4. The gas Methane

19. State the velocity 54 Km h^{-1} in ms^{-1} ?

1. $\frac{54 \times 1000}{60 \times 60}$
2. 54×1000
3. $\frac{54 \times 60 \times 60}{1000}$
4. $54 \times 1000 \times 60 \times 60$

20. The control experiment, a group of students planned to test the hypothesis "The gas CO_2 is in the air" is given below.



In this experiment, which factor has been considered as the variable by the student?

1. Water vapour
2. Air
3. The gas Oxygen
4. The gas Carbon dioxide

Part II

Answer five questions including **the first** question.

- 1 (A) Given below are several things, kept on the common table to do an experiment in the class room.



Triple Beam Balance



Lead nitrate
Solution 20 ml



Sodium chloride
Solution 20 ml

- (a) Write in steps how you are proving the Law of conservation of mass, using these things. (02 m)
(b) Write the law of conservation of mass? (01m)
(c) How do you identify that a chemical reaction has occurred here? (01m)
(d) Name the reactants in this reaction. (01m)

(B) These labelled bottles had been kept on a place where students worked very actively and enthusiastically.

- * Benedict solution
- * Iodine solution
- * Sodium hydroxide solution
- * Copper sulphate solution
- * Food sample A
- * Food sample B
- * Food sample which contains protein

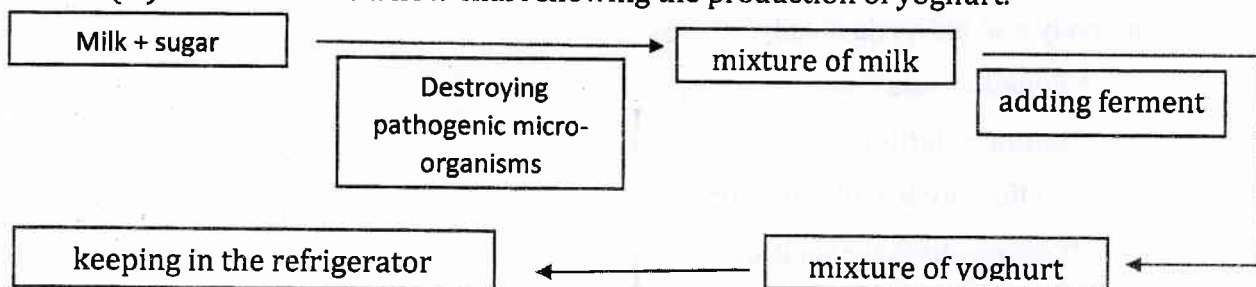
(I) When Iodine solution was added to the food sample A, it turned into dark purple colour.

- (a) Which nutrient is included in this food sample? (01 m)
- (b) Write two foods that contain this nutrient? (01m)
- (II) (a) Which chemicals are used to identify proteins? (01m)
- (b) What observation is given by these chemicals if the food contains proteins? (01m)
- (c) Write two foods each that contain animal proteins and plant proteins? (02m)
- (III) When Benedict solution was added into the food sample B and heated a series of colour changes happened.
- (a) Which nutrient contains in food sample B? (01m)
- (b) Write this series of colour change in order. (02 m)
- (iv) (a) Write two good qualities students can get cultivated in the class room by doing such practicals. (01m)
- (C) After finishing the practicals, how should you keep the equipment you used? (01m)

02. (A) Microorganisms contribute a lot in our day today activities. One application of microbial activity is production of dairy products.

- (i) When making dairy products, which step is taken to destroy harmful bacteria. (01 m)

(ii) Given below is a flow chart showing the production of yoghurt.

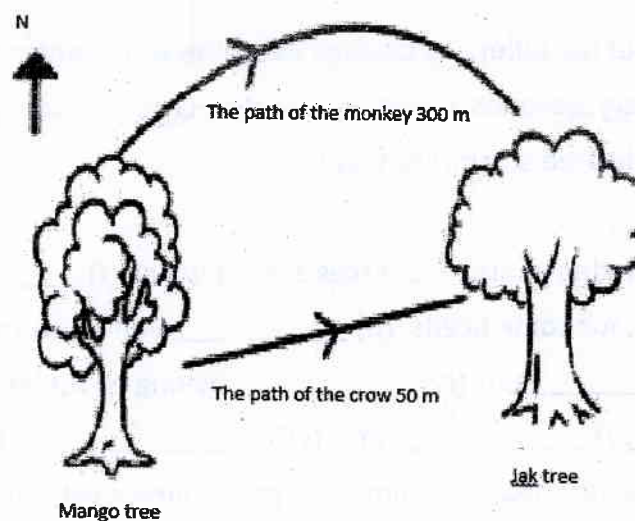


- (a) Write two types of milk that are used to produce yoghurt. (01m)
- (b) Write the names of two bacteria which are used as ferment. (01m)
- (c) Write the chemical reaction happening in milk by bacteria. (01m)
- (d) Write two factors that help yoghurt to get solidified. (01m)
- (e) What do you expect by keeping the yoghurt mixture in a refrigerator? (01m)

(B) In the statements given below, find the suitable answer for the blank and underline.

- (i) In the vaccine _____ (Polio/Rubella) includes the causative agent whose growth has been retarded.
- (ii) Penicillium is a _____ (fungus /bacteria).
- (iii) A disease which is spread by water is _____ (Cholera, Leprosy).
- (iv) A special characteristic of a scientist is _____ (observation, formulating hypothesis).
- (v) _____ (Francisco Reddi/ Francis Bacon) disapproved the theory of spontaneous generation. (1x5=5)

03. (A) The diagram given below shows how a monkey and a crow went from a mango tree to a jak tree.



- (a) According to the diagram, what is the displacement of the monkey?
- (b) What is the distance it travelled? (02 m)
- (ii) What is the vector quantity, out of displacement and distance? (01m)
- (ii) What is the major difference between a vector quantity and a scalar quantity? (01m)

- (iii) If the monkey takes 100s to travel the distance in the diagram, what is the speed of the monkey? (02m)
- (iv) Given below is the information, of a train that travelled to the East between two railway stations.

Displacement (m)	1000	2000	3000	4000	5000	6000
Time (s)	50	100	150	200	250	300

(i) (a) What can you say about the velocity of the train? (01m)

(b) What is the mean velocity of the train? (02m)

(ii) (a) What is the acceleration of a moving object? (01m)

(b) What are the units of acceleration? (01m)

04. (A) Fill in the blanks of the following passage using the words given below.

(renewable, primary, secondary, non - renewable, crude oil, coal, potential, kinetic, electricity, super heated steam, sea waves)

Naturally occurring energy resources are known as (i) _____ energy sources . But, for some needs (ii) _____ energy sources have to be used. (iii) _____ and (iv) _____ belong to the above mentioned first category and (v) _____ and (vi) _____ belong to the above mentioned second category. Some energy resources get finished after using one time. Those are called (vii) _____ energy , and energy sources that do not get finished like that and can be reused are called (viii) _____. (ix) _____ are used least although it is an easily obtainable non depleted energy resource. (x) _____ energy of water is converted into (xi) _____ energy by rotating turbines so that electricity can be generated.

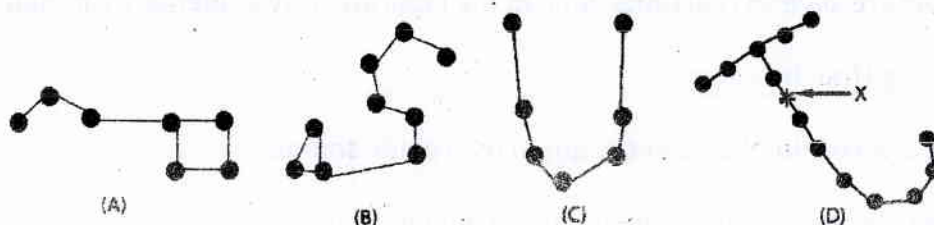
(05m)

(B) As a solution to the energy crisis the world has faced with, in the world today, it is important to look for alternative energy resources.

- (i) What is called energy crisis? (01m)
- (ii) What are alternative energy resources? (01m)
- (iii) Write three examples for alternative energy resources? (01m)
- (iv) Solar energy is the main free energy resource that is abundant in the world.

Write one advantage and a disadvantage of using solar energy. (02m)

05.. (A)



- (i) Name the above constellations. (02m)
- (ii) Name the star denoted as "X" (01)
- (iii) What is the constellation that belongs the brightest star in the sky, "Sirius"? (01m)
- (iv) Write another name for the star "Polaris". (01m)

(B) Students did several reactions with the metal Magnesium, to emphasize the competencies acquired by properties, applications and reactions of substances. Answer the questions regarding that.

- (i) Write the symbol of the element Magnesium. (01m)
- (ii) Write a specific observation, when the metal magnesium is burning in air. (01m)
- (iii) Write the word equation for the chemical reaction happening when magnesium is burning in air. (01m)
- (iv) Which gas evolves, when the metal magnesium reacts with acids? (01m)

- (v) Write an acid you can use there? (01m)
- (vi) Write the name of an indicator you can use in the laboratory, to confirm that the solution made by dissolving magnesium oxide in water is basic. (01m)

06. (A) When heat is given to a piece of ice or a piece of wax, it gets melted and when it is cooled it becomes to the state of a solid. But, when a piece of magnesium strip is burnt in air, it burns with a bright flame and a white powder is remained.

(i) What is a physical change? (01m)

(ii) What is a chemical change? (01m)

(B) Given below are several reactions done in the laboratory by students with their teacher.

(P) Dissolving Urea in water.

(Q) Mixing Hydrochloric acid and Sodium hydroxide solution.

(R) Mixing Calcium chloride and Sodium carbonate solutions.

(S) Mixing Copper strips and Concentrated Nitric acid.

(i) Out of the above reactions,

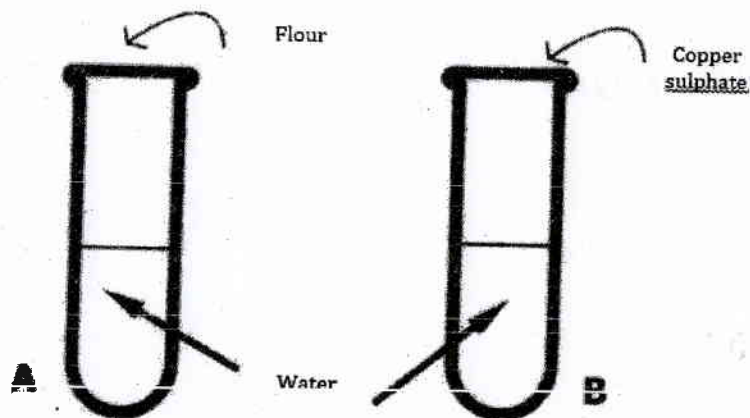
(a) Write a reaction that gives out heat during the reaction.

(b) Write a reaction that absorbs heat during the reaction. (02m)

(ii) Which reaction above gives a precipitate? (01m)

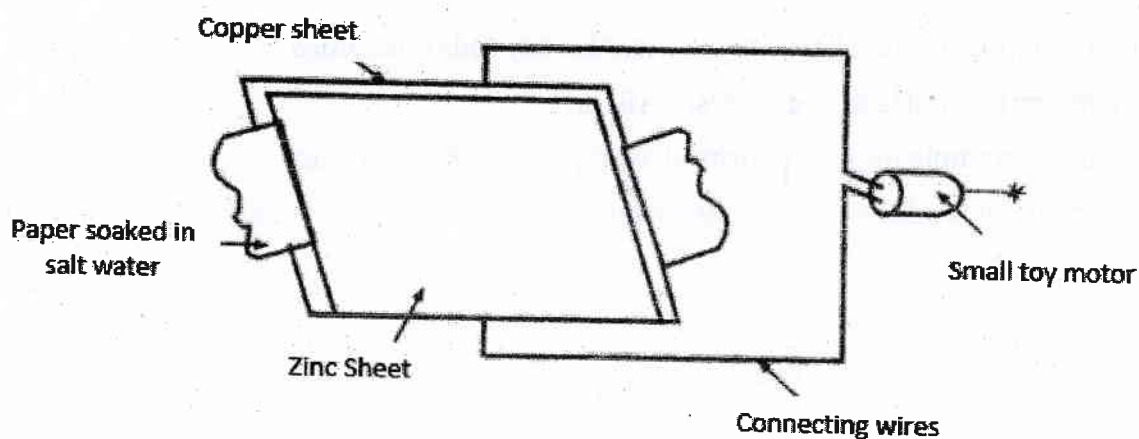
(iii) What is the reaction that gives a colour change while evolving a gas? (01m)

(C) A system when two or more components are mixed at any ratio, without a chemical reaction is called a mixture.



- (i) Write the two main types of mixtures? (01m)
- (ii) Write separately, the solute and the solvent in a sugar solution. (01m)
- (iii) What is the major difference in the above two solutions? (01m)

07. (A) School children engage in different activities. Given below is an equipment made by a student.



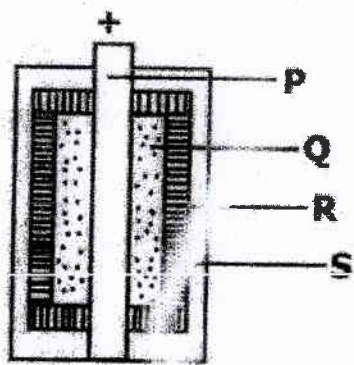
- (i) What is your observation, when the setup is functioning (01m?)
- (ii) What is the reason for the student's observation? (01m)

(iii) Write a change you can do in the set up to get the expected results better. (01m)

(iv) A student suggested that it is suitable to put an LED instead of the small play motor.

What can be the observations? (01m)

(B) Given below is a longitudinal section of a dry cell.



- (i) Name the parts P, Q, R and S in the diagram. (02m)
- (ii) What are the parts which are used as positive terminals and negative terminals in a dry cell? (01m)
- (iii) Write the energy transformation, in the production of current from a dry cell. (01m)

(C) Polymers, composite, and alloys are essential for day today activities.

- (I) Write two examples for polymers. (01m)
- (II) Write an example for a composite strengthened by fibers. (01m)
- (III) Which metal is added into gold when gold jewellery is made? (01m)