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மேல் மாகாணக் கல்வித் திணைக்களம் - கொழும்பு கல்வி வலயம்
Western Provincial Education Department - Colombo Educational Zone

දෙවන වාර ඇගයීම
இரண்டாம் தவணை மதிப்பீடு
Second Term Evaluation
2017

ශ්‍රේණිය தரம் Grade	9	විෂයය பாடம் Subject	Science	පත්‍රය வினாத்தாள் Paper	I,II	කාලය காலம் Time	2 Hours

Index no : .....

Important :

- **Select the most appropriate answer from questions 1-20 and underline it.**

Part I

(1) Select the unsuitable combination.

(1) Nicholus Copernicus – Introduced the helio-centric model
(2) Tycho Brahe – Designed the equipment called sextant
(3) Pythagorus – Declared that earth is a sphere
(4) Johannes Kepler – Explained that planets are moving in elliptical orbits

(2) **Not** a primary energy resource,

(1) Biomass *(2)* Geothermal energy
(3) Natural gas *(4)* Wind energy

(3) The element which is being used mostly in nano-technology at present is,

(1) Carbon *(2)* Sodium
(3) Silicon *(4)* Germanium

(4) Which of the following is not created from the energy released during big-bang explosion?

(1) Matter *(2)* Gravitational force
(3) Time *(4)* Electro magnetism

(5) Select the group which only contain pure metals.

(1) Iron, Lead, Steel *(2)* Brass, Iron, Copper
(3) Copper, Iron, Gold *(4)* Nichrome, Iron, Zinc

(6) Which of the following is considered as a physical change?

(1) Burning a paper *(2)* Metals becoming tarnished
(3) Evaporation of water *(4)* Ripening of fruits

(7) The element which does not show any reaction with acids, bases or water is,

(1) Magnesium *(2)* Iron *(3)* Carbon *(4)* Sodium

[Please turn over

(8) The steps of an experiment carried out by a group of students, in order to find out the ability of dissolving sugar in cold and hot water are given below.

X- Sugar dissolved very fast in hot water and undissolved sugar was found in cold water.

Y- Dissolving equal masses of sugar in equal volumes of cold and hot water.

Z – Solubility of sugar in hot water is high.

Which of the following answers give experiment, observation and conclusion given above in respective order?

(1) X, Y, Z (2) X, Z, Y (3) Y, X, Z (4) Z, Y, X

(9) A star having an equal age to the sun present in our solar system is,

(1) Sirius (2) Aldebaran (3) Alpha Centauri (4) Polaris

(10) The minimum difference which should be present between high tide and low tide, in order to build a high tide- low tide power house is,

(1) 10 meters (2) 4 meters (3) 100 meters (4) 80 meters

(11) Select the group which only include diseases spread by viruses.

(1) Tuberculosis, Tetanus, Dengue (2) Syphilis, Pneumonia, Cholera

(3) Amoebic dysentery, Aluham, Common cold (4) Chicken pox, Measles, Rabies

(12) The constellation which was used in the past to check the eyesight is,

(1) Pleiades (2) Great bear (3) Centaurus (4) Taurus

(13) The symbol used to represent the metal iron during alchemy era is,

(1) ☉ (2) ☽ (3) ♂ (4) ♀

(14) The fossil fuels which contribute in environmental pollution in highest and lowest scale given in respective order are,

(1) Petrol, Diesel (2) Coal, Crude oil

(3) Crude oil, Coal (4) Coal, Natural gas

(15) What is represented by the stars present in the package of CFL bulbs?

(1) High quality of equipment

(2) Efficiency of energy transformation

(3) Environment friendlyness

(4) Produced with high standards

(16) The law of conservation of mass was forwarded by,

(1) Albert Einstein (2) Alexander Flemming

(3) Francis Bacon (4) Anthony Lavoisier

[Please turn over

(17) Final stage of a star is called as,

(1) Nebula (2) Red giant

(3) Black dwarf (4) Protostar

(18) The fundamental of nano-technology is

(1) Approaching from top to bottom (2) Approaching from bottom to top

(3) Aggregation of small particles (4) Formation of strong large particles

(19) The disease caused by a fungus is,

(1) Infection of mouth and reproductive organs (2) Leprosy

(3) Malaria (4) Rabies

(20) The nebulawhich can be observed by the naked eye is found in,

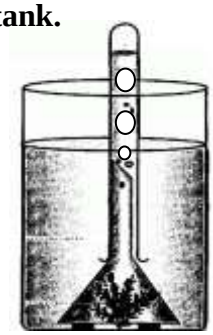
(1) Taurus (2) Orion (3) Scorpius (4) Sirius

Part II

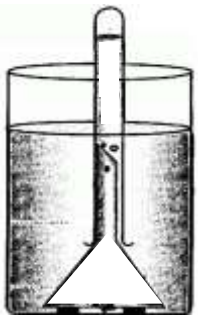
- **Answer the first question and four other questions.**
- **Total number of questions which should be answered is five.**

(1)

(A) Two set-ups which were designed by a student with the help of his teacher and was placed in bright sunlight, in order to study about evolving of gas bubbles from the aquatic plants present in a fish tank.



Set up – A



Set up - B

(i) Write a suitable hypothesis for the above controlled experiment. (1)

(ii) Name the variable factor in the above controlled experiment. (1)

(iii) Name the experimental set-up and control set-up seperately (2)

(iv) What are the steps which needs to be followed in order to come to a reasonable conclusion? (2)

(B) You can get a good knowledge on equipment used in a vehicle repairing worksite by observing such a place.

(i) How can you identify the equipment used in such a worksite correctly? (1)

(ii) A tool board was found in a vehicle repairing worksite. What is the importance of it? (1)

(iii) What is the equipment needed to remove the engine of a vehicle? (1)

(iv) State the importance of following steps in producing compost fertilizer.

a. Adding pre-prepared compost to the mixture (1)

b. Adding water time to time (1)

c. Adding some urea (1)

(C) At present, the demand for energy keeps on rising day-by-day. An energy crisis is created as a result.

(i) What is meant by energy crisis? (1)

(ii) Usage of alternative energy resources can be given as one solution to energy crisis. State the alternative energy resources which can be used instead of following fuels.

a. L. P. gas - (1)

b. Diesel - (1)

c. Petrol - (1)

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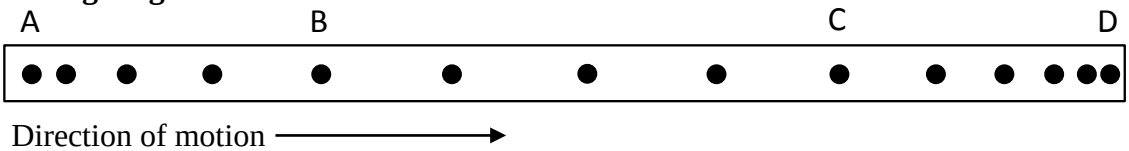
[Please turn over

(2)

(A)

The position of an object moving in a straight path at the end of each second, is shown in the following diagram.



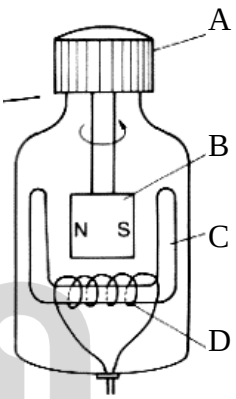
(i) Describe the nature of motion of object in following instances, using the above description.

(a) Between A – B -

(b) Between B – C -

(c) Between C - D - (1x3)

(B) Following is a diagram of a bicycle dynamo.

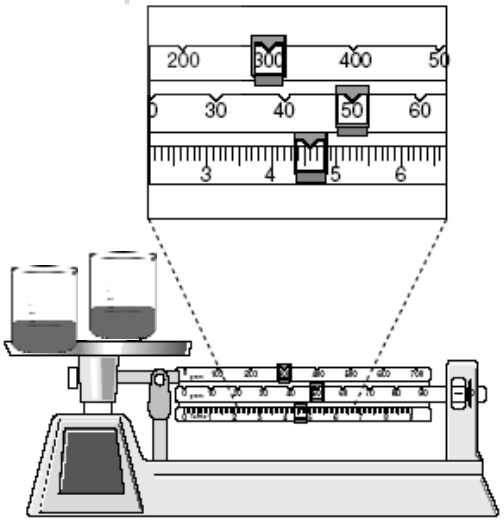


(i) Name the parts A,B,C,D. (2)

(ii) What is the nature of current generated in a bicycle dynamo? (1)

(iii) Solar panels are used to produce electricity. Write the energy conversion taking place in a solar panel. (1)

(C) Two equal sized beakers contain 20ml from sodium bicarbonate solution and dilute hydrochloric acid. When they were kept on the pan of triple beam balance and balanced, it was viewed as shown in the diagram below.



(i) What is the mass of these reactants? (1)

(ii) Those two solutions were mixed and, beakers were placed on the pan of triple beam balance again. What is the observation to confirm the occurance of a chemical reaction? (1)

(iii) What would happen to the reading of the triple beam balance after mixing two liquids, increased, decreased or remained same compared to previous reading? (1)

(iv) Can law of conservation of mass be proved or not using the above activity? Explain the reason. (1)

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[Please turn over

(3)

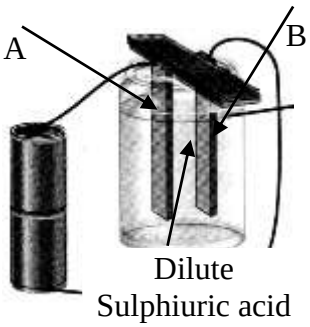
(A) Following is a model made to demonstrate the activity of a lead-acid accumulator.

(i) Name the metals marked as A,B (1)

(ii) Diagram shows an instance where Lead-Acid accumulator is charged. In which electrode a colour change takes place? (1)

(iii) What is the maximum voltage which can be obtained from a cell of this type? (1)

(iv) From which electrode to which electrode the current would flow after charging? (1)



(B) Some chemical substances which were found on the laboratory table are given below. (Concentrated nitric acid, Copper turnings, Calcium chloride solution, Crystal of sulphur, Sodium carbonate solution)

(i) What is the material which burn with a blue flame on heating? (1)

(ii) On mixing which of the above substance, a coloured gas is released? (1)

(iii) Which of the above should be mixed to get a precipitate formed? (1)

(C) **We use alloys for our different needs. Alloys are considered as homogenous mixtures.**

(i) What is meant by a homogenous mixture? (1)

(ii) State one feature which can be used to identify a homogenous mixture. (1)

(iii) State one special property of following alloys.

a. Nichrome

b. Brass

(1x2)
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(4)

(A) Few food extracts which can be used to identify nutrients in food are given below. Complete the following table using them.

a. Extract of a ripe mango
b. Dhal extract
c. Mashed potato
d. Vegetable oil

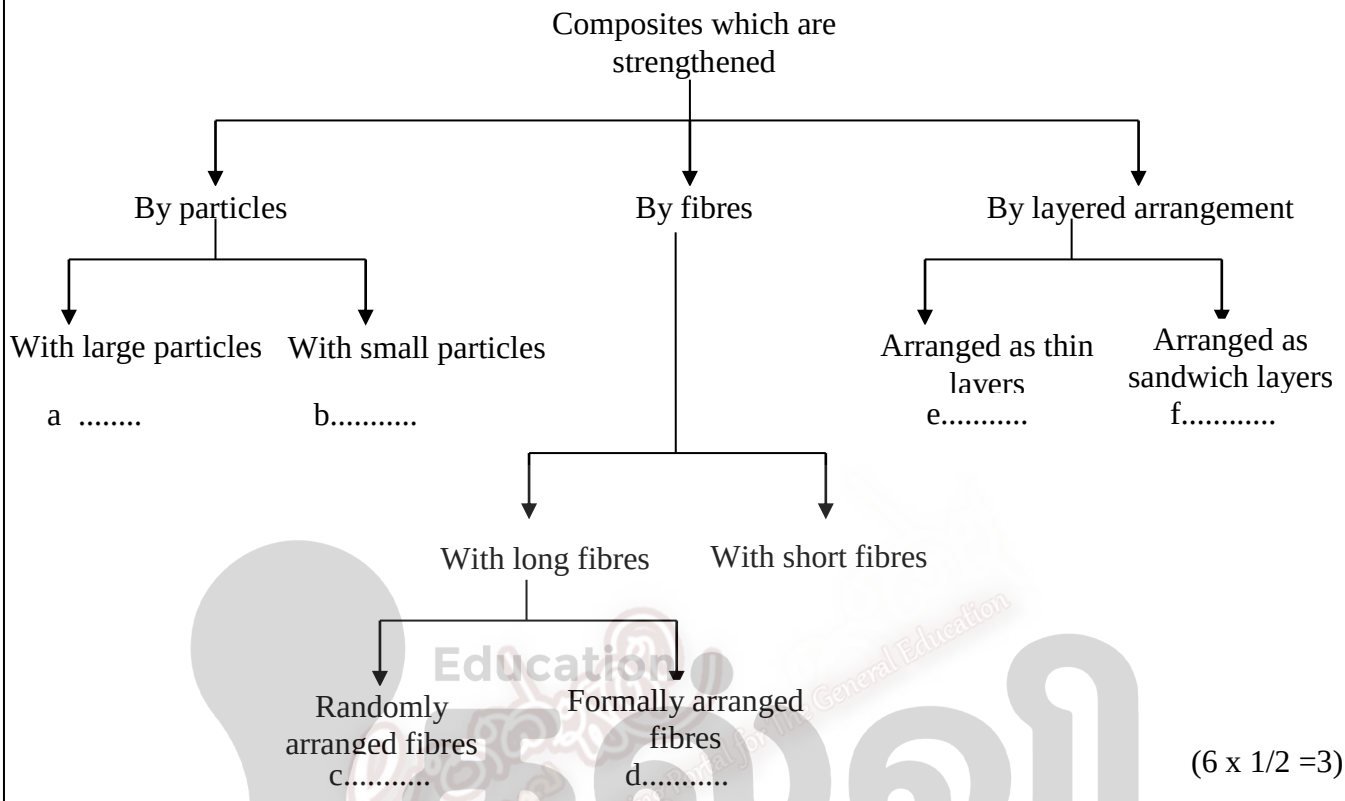
	Nutrient	Food extract used for testing	Chemicals used to identify
1	Lipid	a.	b.
2	Glucose	c.	d.
3	Starch	e.	f.

(6 x 1/2=3)

[Please turn over

(B) Different materials are mixed to make composites stronger. Following chart shows how composites are strengthened. Complete the chart using the letters for the materials given below.

(A-Milk powder packaging, B–Concrete, C–Rubberized coir matrasses, D- Alloys, E-Fibre glass, F-Canvas)



(6 x 1/2 =3)

(C) Information present in the packaging are important in purchasing goods of high quality without getting mislead by commercial advertisements.

(i) Explain what is meant by a quality certificate. (1)

(ii) Explain what is meant by net weight which is mentioned in most packaging. (1)

(iii) What is the reason for including the details of the manufacturer in a product? (1)

(iv) If there are impurities in a food which you purchased, to whom you should inform it at first? (1)

(v) What is the reason for banning the usage of CFC gas in refrigerators? (1)

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(5)

(A) John Dalton was the first to put forward his views regarding the particles from which the matter is composed.

(i) Who forwarded the nuclear model of the atom? (1)

(ii) An atom is composed of two parts according to the nuclear model. What are they? (2)

(iii) Name two sub atomic particles found in an atom and write the names of scientists who discovered them. (2)

[Please turn over

(B) There are many advantages of using symbols for elements.

(i) Write the symbols of following elements. (1/2 x 4 = 2)

(a) Mercury (b) Sodium (c) Potassium (d) Calcium

(ii) A metal show a very slow reaction with cold water. When this metal is heated strongly, it burns with a bright flame leaving a white coloured powder.

(a) What is the metal mentioned above? (1)

(b) What is the gas released when this metal reacts with water? (1)

(c) Write a word equation for the reaction taking place when this metal is burnt in air. (2)

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(6)

(A) Many polymers are used at present to fulfil various needs of human. Natural as well as artificial polymers are present.

(i) Name two natural polymers and write their corresponding repeating unit. (1/2 x 4 = 2)

(ii) State one special property of following polymers.

(a) Polythene (b) Perspex (2)

(iii) State two solutions which can prevent the collection of artificial polymers in the environment, other than recycling. (2)

(B) Nano-technology is a vast area which is linked to many other fields. A presentation on nano-fertilizers was held during a recent exhibition.

(i) What is meant by nanotechnology? (1)

(ii) A cell is a natural nano-system. Name two nano-scale cellular organelles present within a cell. (2)

(iii) Write one special property of following nano-products.

a. Nano thermal insulators -

b. Nano capacitors (2)

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Extra question (Only for Muslim schools)

(7)

(A) There are many benefits of micro organisms to human.

(1) What are micro-organisms? (1)

(2) Micro-organisms are mainly of five types. Name four of them. (2)

(3) State the immunization vaccine which is produced from the parts of causative agent cells or viruses. (1)

(B)

(1) Name the constellation to which following stars belong.

a. Pole star b. Aldebaran (2)

(2) What is meant by ecliptic? (1)

(C) There are many natural nano systems in our surrounding.

(1) What is meant by lotus effect? (1)

(2) Name an instance in the nature in which lotus effect can be seen. (1)

(3) State one adverse impact of nano-technology (1)

(4) What is the organization which operate for avoiding adverse impacts of nano-technology? (1)

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