Royal College - Colombo 07

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Grade 9 – Second Term Test – July 2019

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කාලය : පැය 2
Time : 2 hours

Science

විද්‍යාව

Name :- ..... Grade : -..... Index number:-.....

Part I

- **Underline the correct or most suitable answer for each of the following question.**

1. Main function of red blood cells is
   (i) Transport carbondioxide to body cells.
   (ii) transport oxygen to body cells.
   (iii) perform the body defense mechanism.
   (iv) making a blood clot and prevent over bleeding.

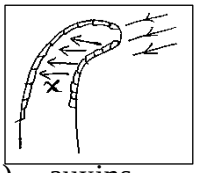
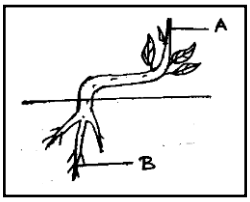
2. 

Diagram illustrates the bending of an apical bud towards the sunlight. Substance given as x is,

   (i) auxins (ii) water
   (iii) Indole butric acid (iv) Gibberellins

3. Following diagram illustrates the growth of a plant which had fallen on the ground.



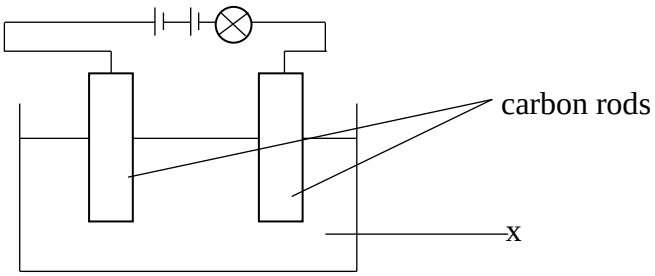
   1 – A shows a negative geotropic movement
   2 – B shows a positive geotropic movement
   3 – A shows a positive phototropic movement
   4 – B shows a negative phototropic movement

   Correct statement out of the above are,

   (i) 1 and 2 only (ii) 1, 2 and 3 only
   (iii) 1, 2, 3, 4 all (iv) 1 and 4 only

4. The theory which is acceptable on the origin of life, out of the followings is,
   (i) Theory of special creation. (ii) Theory of spontaneous generation.
   (iii) Cosmozoic theory (iv) Theory of biochemical evolution.

5.



If the bulb lights up, the substance given by x is,

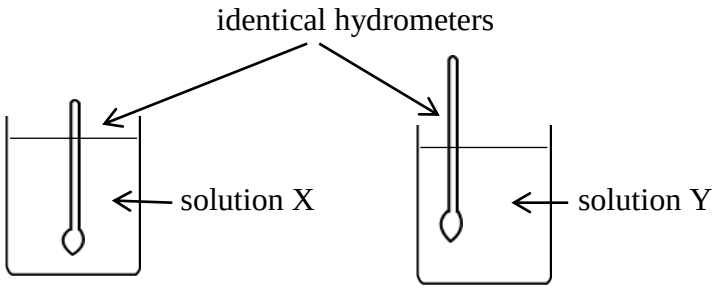
(i) distilled water (ii) kerosene

(iii) acidified water (iv) glucose solution

6. Mass of a liquid volume is 400 kg and the density of it is 1600 kgm^{-3}. Volume of it is.

(i) 0.5 m^3 (ii) 0.25 m^3 (iii) 0.75 m^3 (iv) 1 m^3

7.



(i) X and Y solutions have equal densities.

(ii) density of Y is greater that that of X

(iii) density of Y is lesser that that of X

(iv) density of X is greater than that of Y

8. Relationships between living and living are important for

(i) Food (ii) Safety

(iii) Reproduction (iv) all of the above

9. Out of the gases CO_2 and NO_2

(i) CO_2 is a green house gas

(ii) $NO_2$is a green house gas.

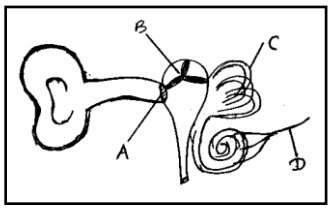
(iii) CO_2 is a green house gas but NO_2 is not a green house gas.

(iv) CO_2 and NO_2 are not green house gases.

10. Number of types of elements in $CaCO_3$.

(i) 2 (ii) 6 (iii) 3 (iv) 5

11.



In this diagram

(i) A is for ear ossicles.

(ii) B is for ear ossicles.

(iii) C is for auditory nerve.

(iv) D is for semi – circular canal

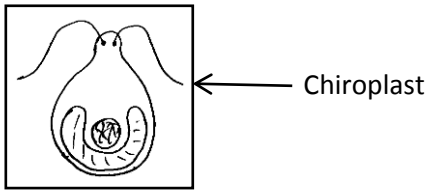
12. Organism given by this diagram is,

(i) An organism in the group of fungi.

(ii) An organism in the group of algae.

(iii) A virus

(iv) An organism in the group of protozoa.



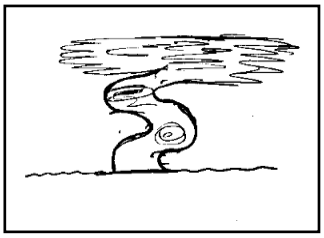
13. Find the correct matching out of the followings.

(i)	Common cold	fungi
(ii)	Tuberculosis	protozoa
(iii)	Malaria	virus
(iv)	Pityriasis	bacteria

14. A water body with brackish water is,

(i) lagoon (ii) estuary (iii) ocean (iv) river

15.



According to the shape of the plant it can be concluded that,

(i) this plant is a xerophytic plant (ii) this plant grows in scrublands.

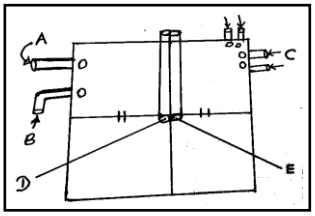
(iii) this plant grows in montane forests. (iv) this plant grows in tropical rain forests.

16. Mass of a unit volume of a substance is known as,

(i) density (ii) pressure

(iii) weight (iv) temperature

17. Following is a diagram of a model of a human heart.



In this model,

(i) A is pulmonary artery. (ii) C is pulmonary veins.

(iii) E is superior vena cava (iv) B is aorta

18. In order to apply copper on an iron nail,

(i) Iron nail should be connected with positive terminal of the cell.

(ii) Copper plate should be connected with negative terminal of the cell.

(iii) any salt solution can be used as the electrolyte.

(iv) copper plate should be connected to positive terminal and iron nail should be connected to negative terminal of the cell.

19. Out of the followings, a statement which is <u>not</u> related with "green transport " is,

(i) minimizing the use of private vehicles.

(ii) promote and facilitate the use of hybrid vehicles.

(iii) promote the use of vehicles with solar panels or electric cells.

(iv) use of vehicles with excessive consumption of fossil fuels.

20. Weight of 20 kg mass is,

(i) 200 N (ii) 2000 N (iii) 20 N (iv) 0.2 N

(2 × 20 = 40 marks)

Part II

- **Write answers for five (05) questions.**
- **Question number (01) is compulsory.**

1. (A) A Student needed to conduct an experiment to find the density of water. He intends to conduct an experiment in the laboratory for this.

   (i) Write the name of two laboratory equipments he needs.

   (2 marks)

   (ii) Mention two readings he should take to find the density.

   (2 marks)

   (iii) Prepare a suitable table to record the readings taken by him.

   (3 marks)

   (iv) If density is represented by d, volume is represented by V and mass is represented by m, write an equation to show the relationship among them.

   (1 mark)

   (B) (i) Give a suitable definition for "Force"

   (1 mark)

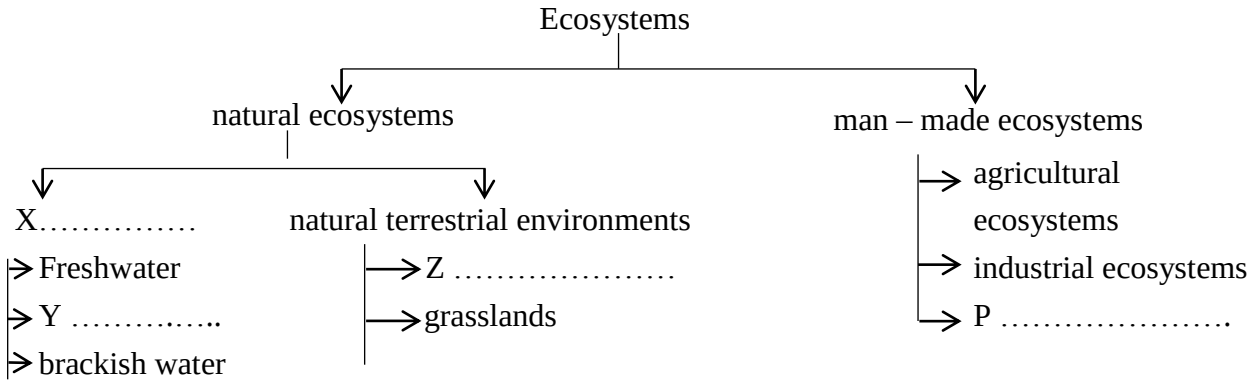
   (ii) 20 N force is applied on a block of wood towards East. Represent it graphically.

   (2 marks)

   (iii) 150 Pa pressure is applied by an object with an area of contact of 2 m^2. Find the force applied by it.

   (2 marks)

   (C) Following chart illustrates the types of ecosystems. Name X, Y, Z and P of it.



   (4 marks)

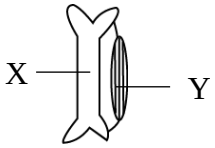
2. Plants, animals and micro – organisms show movements. They show movements to respond for stimuli.

   (i) Mention the three groups of organisms that show movements. (2 marks)

(ii) Define the term 'Movements'

(1 mark)

(iii) Name X and Y structures which are involved in the movements of verterbrates.

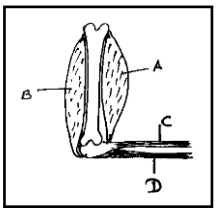


(1 mark)

(iv) Write two features of muscles.

(2 marks)

(v) Following diagram illustrates the structures related for bending of hand from the elbow junction.



Name A, B, C and D structures. (2 marks)

(vi) Write down the changes in A and B when bending the hand.

(1 mark)

(vii) Mention the two major types of plant movements.

(1 mark)

(viii) Provide an example for positive photo tropic movement.

(1 mark)

3. (i) Name the "first scientific theory" or explanation about the origin of the universe and solar system.

(1 mark)

(ii) A modern theory on the origin of life explains that "the universe was an energy source with a great energy and giant explosions took place in it". What is the name given for this theory?

(1 mark)

(iii) Name a gas presented in the early atmosphere and a gas originated later which supports for combustion and respiration.

(1 mark)

(iv) How old the life originated on the Earth?

(1 mark)

(v) Mention two theories introduced on the origin of life on the Earth.

(2 marks)

(vi) Briefly explain the "Primordial Soup"

(1 mark)

(vii) Provide short answers for each of the following descriptions.

a) first form of living organism
b) first form of autotrophic organism
c) first form of multicellular organism

(3 marks)

(viii) Explain what is meant by a fossil.

(1 mark)

4. We find many different types of ecosystems on the Earth.

(i) Explain what is meant by an "ecosystem"

(1 mark)

(ii) Name a major type of ecosystem.

(1 mark)

(iii) What is the meaning of an endemic plant species?

(1 mark)

(iv) The reasons for the biodiversity degradation can be discussed under two topics. What are they? (2 marks)

(v) What are known as bio – diversity hotspots?

(1 mark)

(vi) Explain, What is meant by a lagoon.

(1 mark)

(vii) What types of water is available in an estuary?

(1 mark)

(viii) Write 2 (two) significances of an oceanic ecosystem.

(1 mark)

5. Consider the $^{35}_{17}Cl$ atom.

(i) How many protons are there in it?

(1 mark)

(ii) How many electrons are there in it?

(1 mark)

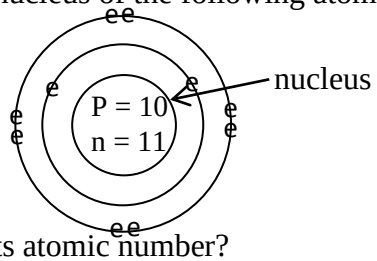
(iii) How many neutrons are there in it?

(1 mark)

(iv) Mention two homo - atomic and two hetero - atomic melecules separately.

(2 marks)

(v) consider the nucleus of the following atom.



a. What is its atomic number? (1 mark)

b. What is its mass number? (1 mark)

(vi) Mention two homogeneous and two heterogeneous mixtures separately.

(2 marks)

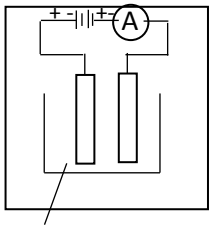
(vii) Write down a suitable method to separate the components of each of the following mixtures.

a. separating dead seeds from paddy seeds. (1 mark)

b. extraction of cinnamon oil from cinnamon leaves. (1 mark)

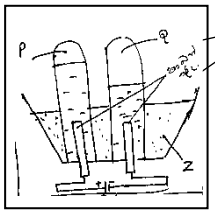
6. Given diagrams illustrate the equipments used for the experiments on electrolysis.

A – experimental setup



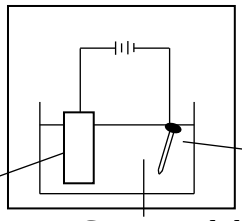
Solution X

B – experimental setup



Carbon rods

C – experimental setup



Iron nail

copper plate

Copper sulphate solution

(i) The experiment setup A is used to check the electric conductivity of liquids or solutions.
   a. Mention a suitable liquid or solution for solution X which gives a deflection in Ammeter. (1 mark)
   b. Mention a liquid or solution for X which does not give a deflection in Ammeter. (1 mark)

(iii) Lime juice is used as solution X in the setup A. What observation do you find in the Ammeter reading? (1 mark)

(iv) When the set-up B is considered,
   a. Name the gas collected as P. (1 mark)
   b. Name the gas collected as Q. (1 mark)

(v) Name the liquid/ solution you used in the experiment for Z. (1 mark)

(vi) Mention a special point to be considered when preparing the set up B. (1 mark)

(vii) When the set up C is considered,
   a. What is the observation on the iron nail during the experiment ? (1 mark)
   b. Mention whether a change occurs or not to the blue colour of the solution. (1 mark)
   c. What is the observation on the copper plate? (1 mark)

7. Write short answers for each of the following questions.
   (i) How do you name the technology used to extract metals from metal ores using micro – organisms. (1 mark)

   (ii) A fly is a pathogen or a vector for diseases? (1 mark)

   (iii) On which place of the retina you do find the sharp images? (1 mark)

(iv) Convex lenses with relatively high focal distance have high curvature or low curvature?
(1 mark)

(v) External ear lobe is a muscular structure or cartilaginous structure or bony structure?
(1 mark)

(vi) Name a chemical substance which is yellow colour and crystalline.
(1 mark)

(vii) What is the weight of 100 g mass?
(1 mark)

(viii) In a body organ, which type of blood vessel provides necessary materials to cells and receives waste materials from the cells?
(1 mark)

(ix) Name the structure used by earthworm for the locomotion.
(1 mark)

(x) Give an example for positive thigmotropic movement.
(1 mark)