Minuwangoda Education Zone

Second Term Test - 2023

Grade 9

Science Time : 2 hours

Part I

- **Answer all the questions in part I.**

1. Which of the following is the pair of viral diseases in human?

   i. Aids and Covid 19 ii. Covid and tuberculosis

   iii. Cold and Pityriasis iv. Dengue and Pneumonia

2. A living fossil is

   i. Cockroach ii. Black ant iii. Gecko iv. Millipede

3. The species of bacteria that are directly added to the soil as biofertilizers

   i. *Erwinia uredovora* ii. *Alternaria*

   iii. *Azotobactor* iv.*Bacillus thuringiensis*

4. A tropical rain forest is

   i. Wilpattu ii. Sinharaja iii. Horton planes iv.Rakwana forest

5. Which blood group is considered as the universal recipient in blood transfusion?

   i.A ii. B iii. AB iv. O

6. Growth of the pollen along the tube towards the ovule is,
   i. Positive phototropism
   ii. Hydrotropism
   iii. Thigmotropism
   iv. Chemotropism

7. Which part contains light sensitive rod cells and cone cells in the eye?

   i. Retina ii. Blind spot iii. Lens iv. Choroid

8. The answer with the all elements in a glucose molecule is,
   i. C, H, S ii. C, O iii. C, H, O iv. C, H, O, N

9. Not a characteristic of an ecosystem.
   i. The energy flows through one way stream.
   ii. Recycling of materials
   iii. Interaction occurs between living components as well as between non-living components.
   iv. Having only one species

10. The liquid part of the blood is named as,
    i. Blood plasma ii. Red blood cells iii. White blood cells iv.Platelets

11. What is the correct answer for the atomic number and mass number of the aluminum atom?
    i. ${}^{13}_{27}\mathrm{Al}$ ii. ${}^{27}_{13}\mathrm{Al}$ iii. Al^{13}_{27} iv. Al^{27}_{13}

12. Which of the following solution considered as an electrolyte solution?
    i. Copper sulphate solution
    ii. Glucose solution
    iii. Distilled water
    iv. Coconut oil

13. The currently accepted theory of the origin of life on the earth is
    i. Theory of special creation
    ii. Cosmozoic theory
    iii. Spontaneous generation theory
    iv. Theory of biochemical evolution

14. A homo atomic molecule is
    i. Water ii. Methane iii. Oxygen iv. Carbon dioxide

15. Where is the sharpest image formed in the eye?
    i. Blind spot ii. Optic nerve iii.Yellow spot iv Eye lens

16. The standard unit of force is
    i. Watt ii. Newton iii. Pascal iv. Kilogram per cubic meter

17. A factor that is not considered in the construction of building according to the green concept is,
    i. Water conservation
    ii. Building premises to have maximum plant cover
    iii. Electricity generated by hydropower
    iv. Having windows and doors that allow for clean ventilation

18. The symbol of an element presented based on the Latin name is
    i. S ii. Al iii. Na iv. Zn

19. A hormone used to induce root formation of stem cutting
    i. TPA ii. IAA iii. NAA iv.DPA

20. It is our responsibility to protect the environment. Select the answer that states how you can contribute to it.
    A. Use of alternative materials instead of polythene
    B. Proper disposal of waste
    C. Always use chemical fertilizers and pesticides to get more crops
        i. Only A and B
        ii. Only A and C
        iii. Only B and C
        iv. All A, B and C

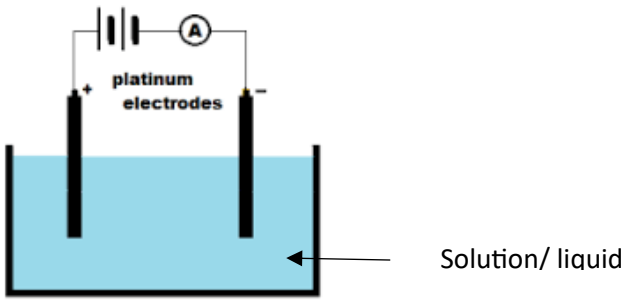
Part II

Answer the first question and four more questions only.

1. A student made the following setup to identify electrolytes and non-electrolytes.

A.

i. Record the relevant observations in the table when the activities are carried out for the following solutions/ liquids.

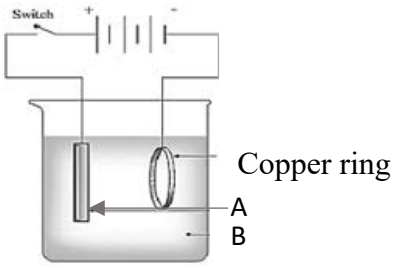


Solution/ Liquids	Needle of the ammeter deflect / not
Kerosene	(a)
Salt solution	(b)
Coper sulphate solution	(c)
Distilled water	(d)

(1/2 x 4 =2m)

ii. Name two electrolytes from the above liquids or solutions. (2m)

iii. The diagram shows an electrolytic cell used to electroplate a copper ring with silver.



a. Name a metal that can be used as electrode A. (1m)
b. Write an observation that can be seen in metal A at the end of the electrolysis.(2m)
c. Write a precaution can be taken to obtain a plating of high quality? (2m)

B. The density of a substance is a unique value to that substance.

i. Write the formula used to calculate density. (1m)

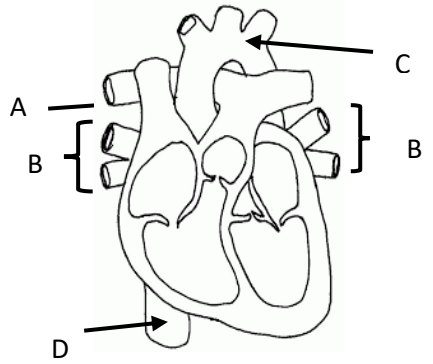
ii. Calculate the mass of a substance with a volume of $25cm^3$ and the density with $800kgm^{-3}$? (2m)

iii. Write the special names of the hydrometers used in each of the following cases.
   a. To determine the composition of latex. (1m)
   b. To determine the composition of a soil sample. (1m)
   c. To measure the percentage of alcohol in alcoholic drinks like wine and beer. (1m)

iv. Draw a diagram of how you used laboratory equipment to measure density of water. (1m)

(Total : 11m)

2. Given below is a rough diagram of the human heart.



A. i. Name the blood vessels shown with letter A, B, C, D in the diagram. (2m)
ii. Write the two blood vessels that originate from the left and right ventricles of the human heart respectively. (2m)
iii. What is the name of the valves at the beginning of the vessels? (1m)
iv. What is the type of corpuscles in blood rapidly reduced in viral infection? (1m)

B. i. . What is blood agglutination? (1m)
ii. Blood type matching is very important in blood transfusion. What is the other factor to match? (1m)

C. Various movements can be seen in plants. Which type of plant movement do the following belong to?
   a. Stem growing towards the light.
   b. Roots moving toward the water source.
   c. Coiling of tendrils in passion fruit with the support.
   d. Shrinking of *Mimosa* leaves when the stimulus is touched.
   e. Blooming of flowers with the sunrise
   f. Growth of the pollen along the tube towards the ovule (1/2x6=3m)

(Total : 11m)

3. Match A with B

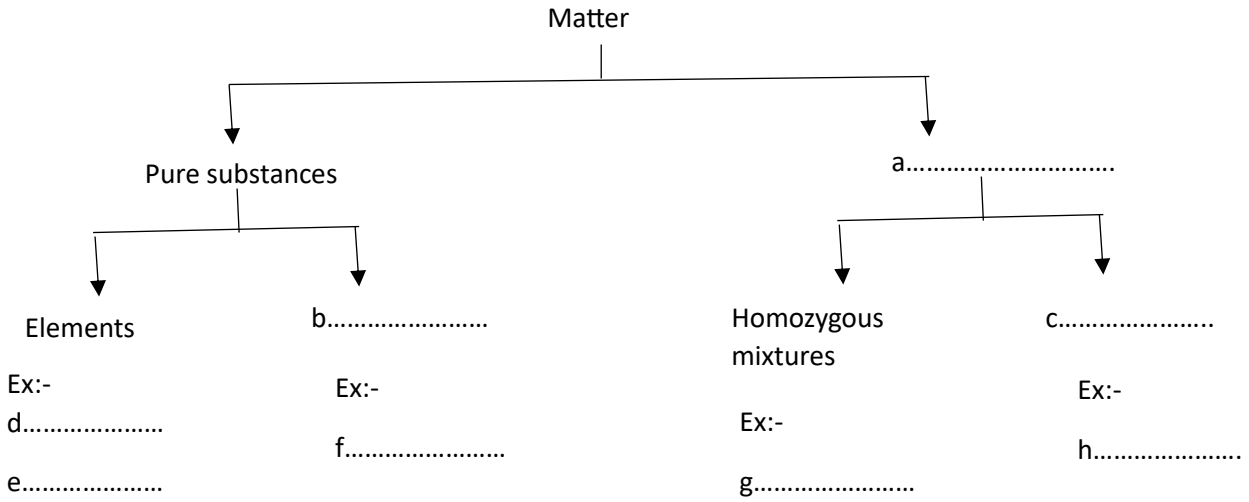
A	B
A bacterial species used as a culture for yoghurt production	Monococcus
An eye disease caused by the denaturing of protein in the eye lens	Newton (N)
A part of the ear that helps to keep the body balance	Forest
A hormone which effects to increase the height of the plant	Crystallization
Standard unit for measuring density	Lactobacillus
An artificial hormone that can be used to produce fruits in off seasons	Iris
The part of the eye commonly known as black ball	Gibberellin
The method to separate sugar from sugar cane	Kilogram per cubic meter (Kgm^{-3})
A bacterium that acts on an organic substrate to produce bio gas	Cytocel
The standard unit for measuring force	Cataract
A natural terrestrial environment	Semicircular canal

(1 x 11m)

4.

A.

i. Complete the following chart.



(1/2x8=4m)

ii. $^{23}_{11}Na$ is the symbol of sodium atom and its details. According to that answer the following questions.

a. Atomic number (1m)
b. Mass number (1m)
c. Number of electrons (1m)
d. Number of neutrons (1m)

B.

i. Define force. (1m)
ii. Write two changes that can be made to an object by applying a force (1/2x2=1m)
iii. A pressure of 150Pa is applied on an object. calculate that force if that force is applied on area of $2m^2$. (1m)

(Total : 11m)

5.

A. Euglena, Rhizobium, Diatom, Chlamydomonas, Ebola, Amoeba, Influenza, Mucor, Methanococcus, Penicillium

i. Classify the above micro-organisms into the following categories

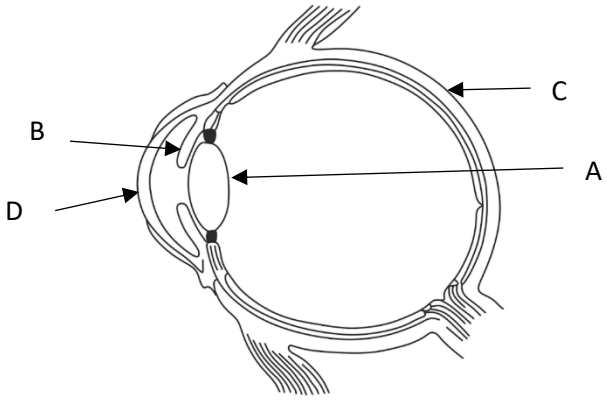
Bacteria	Fungi	Protozoa	Algae	Virus

(1/2x10=5m)

ii. Write the names the following cases related to micro-organisms.

a. Using micro-organisms for industry
b. Using micro-organisms for metal extraction
c. Using micro-organisms for removing environmental pollutants
d. Using micro-organisms for military purposes(1/2x4=2m)

B.



iii. Above diagram shows the structure of human eye. Name a, b, c and d. (2m)
iv. Name the place which form the clearest image on the retina? (1m)
v. What is the structure which controls the amount of light entering the eye? (1m)

(Total : 11m)

6.

A.

i. What is the theory which considered to be the first scientific theory about the origin of the earth? (1m)
ii. "In the beginning the universe was considered as a super charge energy source and then there was a big bang''. What is this theory? (1m)
iii. Name an early gas on earth and a later gas important for combustion and respiration. (1m)
iv. What is the present accepted theory about the origin of life on earth? (2m)
v. Briefly describe primordial soup. (1m)

B. Complete the following table according to the observations which are obtain by a field visit of grade 9 students. (1/2x4=2m)

i.

Reported observation	Environment	Example
The plant tops are separated in to 3 distinct layers. Epiphytes and climbing plant are abundant. An area where a river falls into the sea. There are islands called delta. Contains brackish water.		

ii. Write examples for each of the following relationship that can be found in an ecosystem.
   a. Living – living relationship (1/2m)
   b. Living – nonliving relationship (1/2m)
iii. Write two differences between a natural environment, forest and a built environment, an agricultural environment. (2m)

(Total : 11m)

7. Filling the blanks by using the most suitable words from the following word list.
(Convex lens, Hydrogen, Distance, Hotspots, Pseudomonas, Iris, Pupil, Cataract, Tricuspid valve, Biceps, Methane, Concave lens, Force, Methanococcus, Glaucoma, Crystallization, Steam distillation, hemoglobin, Tricuspid valve, Triceps)

i. What is the type of lens that is used as a remedy for long sight?.....
ii. A gas with homoatomic molecules……
iii. A vector quantity……...
iv. The regions of higher density of living organisms…….
v. An anaerobic bacterium active on organic substrates……
vi. The hole through which light enters the eye…….
vii. A condition of the eye caused by damage to the optic nerve……
viii. Method of extracting cinnamon oil from cinnamon leaves…….
ix. The valve between the right atrium and the right ventricle of the heart……
x. The pigment that causes the red color of human blood……
xi. The muscle connects to ulna of human elbow joint ……

(1x11=11m)