



PROVINCIAL DEPARTMENT OF EDUCATION - NORTH WESTERN PROVINCE

## Second Term Test 2018

Grade 9

SCIENCE

Time : 2 hours

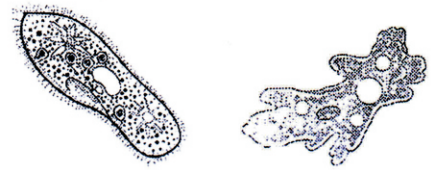
Name / Index No.

### Part I

- Answer for all the questions.
- Underline the correct or most suitable alternative.

01. The group which the micro-organisms in the picture belong is,

- (1) Protozoa                      (2) Algae  
(3) Bacteria                      (4) Fungi



02. Followings are three statements about micro-organisms presented by a student,

- A. Micro-organisms can be used in medical field usefully.  
B. Microbial activities are essential for the existance of the earth.  
C. The adverse effects of micro-organisms are minimum in relative to their uses.

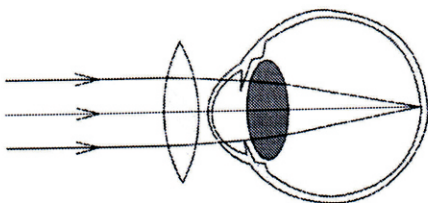
The correct statements are,

- (1) A and B                      (2) A and C                      (3) B and C                      (4) A, B and C

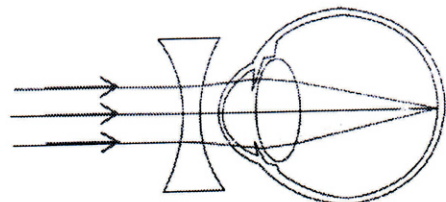
03. Most common eye defects exists in the present are,

- (1) hypermetropia and myopia                      (2) hypermetropia and glucoma  
(3) Glucoma and cataract                      (4) Cataract and myopia

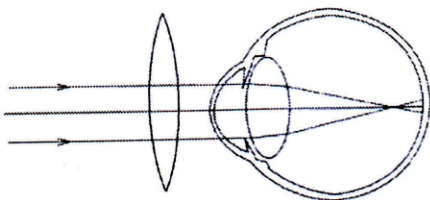
04. The correct diagram of the vision obtained after applying the remedy for myopia is,



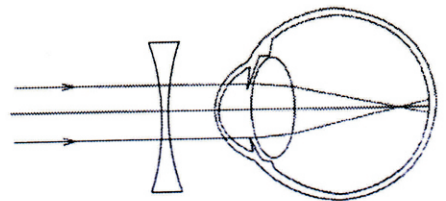
(1)



(2)



(3)



(4)

05. What is the symbol of the element calcium?

- (1) K (2) Ca (3) C (4) Cl

06. Chemical formula of Carbon dioxide and sodium chloride respectively are,

- (1)  $\text{CO}_2$  and NaCl (2) CO and NaCl (3)  $\text{CO}_2$  and SOCl (4) CO and SOCl

07. What are the elements present in Calcium Carbonate ( $\text{CaCO}_3$ ) ?

- (1) Calcium, Oxygen, Carbonate (2) Calcium, Carbonate, Oxygen  
(3) Carbon, Oxygen (4) Calcium, Carbon

08. The diagram shows a graphical representation of two forces,



The correct statement regarding the two forces above is,

- (1) The two forces are equal in magnitude.  
(2) The two forces act for the same direction.  
(3) The magnitude of force Q is greater than P.  
(4) The magnitude of force P is greater than Q.

09. The reason for fixing many tires for the vehicle given in the figure is,

- (1) To reduce the weight of the vehicle.  
(2) To increase the weight of the vehicle.  
(3) To reduce the pressure exert by the vehicle.  
(4) To increase the strength of the vehicle.



10. The blood vessel which combines to the right ventricle is,

- (1) Superior vena cava (2) Systematic artery  
(3) Pulmonary artery (4) Pulmonary vein

11. The chemical substances that regulate the growth of plants are,

- (1) Plant hormones (2) Growth substances  
(3) Inhibitors (4) Stimulators

12. There are three types of plant movements are given below.

- A. Shrinking the leaves when touching.
- B. Shrinking the leaves in the dark.
- C. Growing of plant roots towards ground.

The nastic movements that showing by the mimosa plants are,

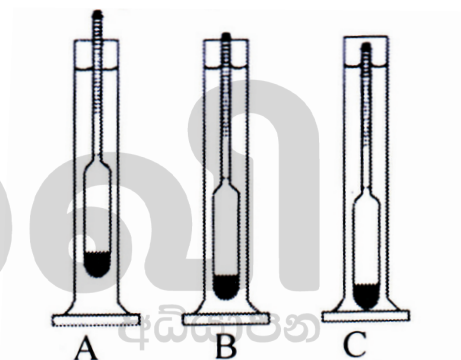
- (1) A and B                      (2) A and C                      (3) B and C                      (4) A, B and C

13. The organism that born very first during the evolution was,

- (1) Cockroach                      (2) Monkey                      (3) Earth worm                      (4) Bacteria

14. The diagram given below shows the way of comparing the density of three liquids by using a hydrometer. The liquid with lowest and highest density respectively are,

- (1) A and B  
(2) A and C  
(3) B and C  
(4) C and A



15. A product of electrolysis of water gives a 'pop' sound when introducing a glowing splint to identify it. What is this gas?

- (1) Oxygen    (2) Hydrogen  
(3) Carbondioxide    (4) Methane

16. Bio diversity is,

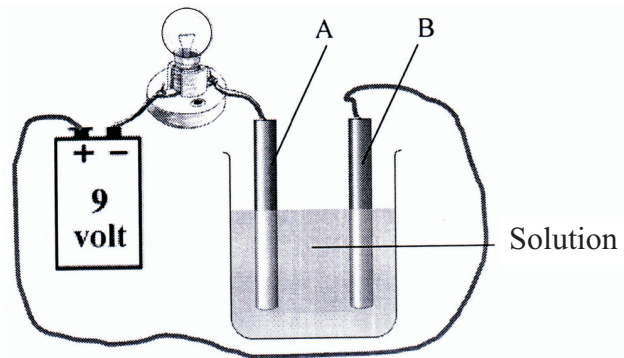
- (1) Diversity among eco systems.
- (2) Diversity among organisms live in eco systems.
- (3) Differences among organisms due to the genetic diversity.
- (4) Diversity among eco systems, genetics and species.

17. A method to increase the productivity in agriculture is,
- (1) Increase the harvest by using chemical fertilizers.
  - (2) Use more powerful pesticides and agrochemicals to control pests.
  - (3) Use multiple crop cultivation, crop rotation, post crop technology and genetic technology.
  - (4) Move to use modern machines and modern cultivation technology instead of using traditional methods.
18. Followings are some statements presented by a group of students about the green concept.
- A. Increase the plant cover on the earth.
- B. Minimize the emission of green house gases.
- C. Generate electricity from solar power.
- Correct statements are,
- (1) A and B      (2) A and C      (3) B and C      (4) A, B and C
19. What is the correct statement regarding the natural eco systems?
- (1) Estuaries contain fresh water.
  - (2) Lagoons contain brackish water.
  - (3) Water in rivers use to generate hydro power electricity.
  - (4) Tanks which are constructed by man are type of inland water body.
20. When three immisible liquids contain in one vessel,
- (1) The liquid with greatest density is the lowest layer.
  - (2) The liquid with least density is the lowest layer.
  - (3) The liquid with greatest density is the topmost layer.
  - (4) Water which added initially exists at the bottom.

- Answer for the first question and four other questions.
- The first question carries 16 marks and each other questions carry 11 marks.

01. The diagram given below is to identify electrolyte and non-electrolyte liquids / solutions.

Solutions which used
<ul style="list-style-type: none"> <li>• Salt solution</li> <li>• Acidulated water</li> <li>• Kerosine oil</li> <li>• Copper sulphate solution</li> </ul>



- State the observations separately if kerosine oil and salt solution are used as electrolyte. (02m.)
- Classify salt solution, acidulated water, kerosine oil and copper sulphate solution which used above as electrolytes and non-electrolytes. (02m.)
- What is the positive electrode from A and B? (01m.)
- States two reasons for using carbon or granite rods as electrodes in A and B. (02m.)
- If copper is used as the solution state the observations near the A, B electrodes and in the solution. (03m.)
- State an element and a compound that can be extracted by electrolysis. (02m.)
- If it is needed to coat copper around an iron nail properly,
  - State the substances that should be used as positive electrode and as negative electrode. (02m.)
  - What is the electrolyte suitable for this? (01m.)
  - Is it suitable to use 1.5V cell or a 9V cell for electric supply. (01m.)

(16 marks)

02. A The main function of the ear is receiving senses about the sound and maintain body balance.
- What is the structure that the senses of sound transfers to the auditory nerve? (01m.)
  - What is the structure that contributes the body balance which **doesn't participate in hearing**? (01m.)
  - What is the function of eustachian tube? (01m.)
  - What is the hearing limit frequencies of human ear? (01m.)
  - State a precaution should be taken to protect the ear? (01m.)

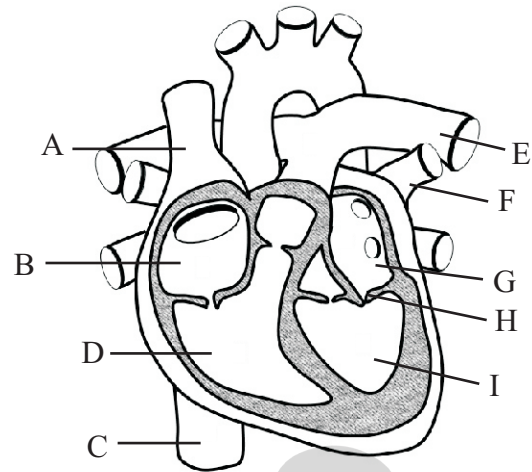
B. Production of bio gas is an instance of using micro-organisms. Micro-organisms. act an organic substratum of organic matter and aqueous solutions.

- Name an organic substance that can be used to produce bio gas in Sri Lanka. (01m.)
- What is the group of micro-organism used to produce bio gas? (01m.)
- What is the main gas contains in bio gas which can be used as an energy? (01m.)
- State the two elements in the gas you mentioned above. (02m.)
- State another use of producing bio gas except providing energy. (01m.)

(11 marks)

03. A. The diagram given below is used by a group of students to study about the human heart.

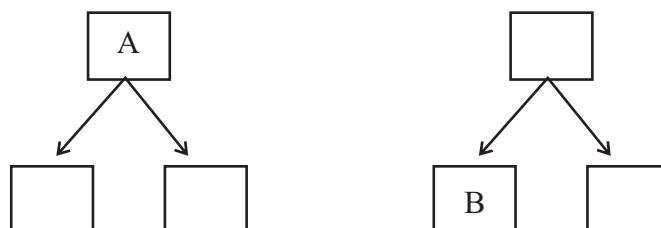
- There are four Chambers.
- A valve is in between each upper and lower chamber.
- There are two valves at the origin places of two main arteries.
- There are two main arteries associate with the heart.
- There are more than one blood vessels are connected to upper chambers of the heart.



- Name the B, D, G and I chambers respectively. (02m.)
- What is the name of H valve? (01m.)
- Name the blood vessels marked as A, C, E, and F. (02m.)
- State the information relevant to the statements given below using the letters of the diagram. (02m.)
  - A blood vessel carries blood away from the heart.
  - A blood vessel carries blood towards the heart.
- What is the name of the valves found at the origin places of main arteries? (01m.)

B Human blood groups can be divided as A, B, AB and O. It is needed to consider the compatibility of the blood group and the Rhesus factor in a case of blood transfusion.

- Draw the diagram given in your answer sheet and fill in the blanks related to compatibility of blood groups. (02m.)



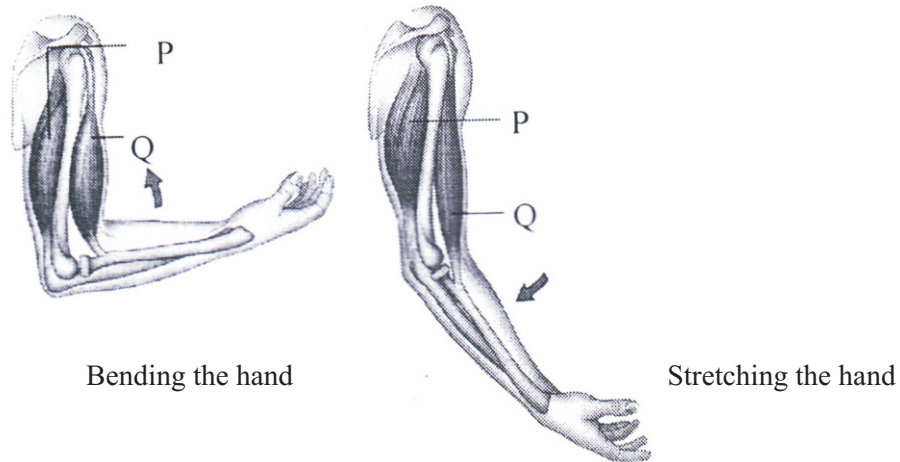
- Write all the blood groups with the Rhesus factor that can be received by a person with AB<sup>+</sup> blood group. (01m.)

(11 marks)

04. A. There is a belief of the life was established billions of years after the origin of the earth.
- State two theories about the origin of life of the earth. (02m.)
  - Name two evidences to confirm that the organisms living in the present were evolved from initially existed organisms. (02m.)
  - What is the name given to the organisms which survive even today retaining their physical properties unchanged though million years have passed? (01m.)
- B. Eco system diversity, species diversity and genetic diversity commonly can be taken under bio diversity.
- State an importance of bio diversity for organisms. (01m.)
  - What are the main two ways of bio degradation? (02m.)
  - Classify the given interactions under biotic - biotic, biotic - abiotic, abiotic - abiotic interactions. (03m.)
    - Plants use solar energy for Photosynthesis.
    - Soil erosion occurs by water.
    - Animals depend on plants for food. (11 marks)
05. A. The building unit of an element is atom. There are three types of sub atomic particles in an atom. A student was constructed following statements by naming sub atomic particles as A, B and C.
- |                   |                         |                             |
|-------------------|-------------------------|-----------------------------|
| A = Atomic number | A in a neutral atom = B | Mass number = ..... + ..... |
|-------------------|-------------------------|-----------------------------|
- Identify and name the sub atomic particles given as A, B and C. (03m.)
  - What are the two letters needed to write the mass number out of A, B and C? (01m.)
  - What is the lightest sub atomic particle? (01m.)
  - If an atom X has 6 of each type of sub atomic particles, what is the mass number of X atom? (01m.)
- B. Eco systems in Sri Lanka can be divided into natural eco systems and artificial eco systems.
- What are the three types of man made eco systems? (03m.)
  - State an example for a tropical rain forest under natural eco systems. (01m.)
  - What is the natural aquatic eco system which used in generating hydro power electricity? (01m.)
- (11 marks)
06. A. Animals use different appendages for locomotion. Muscles and bones which are combined with those appendages are used for movements.
- Name the locomotive appendage of the animals given below. (02m.)
    - Amoeba
    - Snail
    - Parrot
    - Bat



- ii. The way of folding and unfolding the hand is given by the diagram below. During this movements P and Q muscles show contractions.



State the letter of the muscle that contract during each instance given below. (02m.)

- Bending the hand
  - Stretching the hand
- iii. Draw a labeled diagram of a setup which is made to demonstrate the contraction of muscles during the bending and stretching the hand. (02m.)

#### B Animals as well as plants show movements.

- Write the name given to the each type of movement given below.
  - There is a direct interaction between the stimulus and the direction of the response. Occurs due to influence of growth substances. (01m.)
  - Though the stimulus affect for make the response, the direction of the stimulus doesn't affect for the response. The movement occurs for a considerable direction. (01m.)
- When the mimosa leaves are touched they shrink. What is this type of movement? (01m.)
- What is the name of the method of conserving animals in their natural habitats? (01m.)
- State a strategy that is used to conserve plants in their natural living environments. (01m.)

(11 marks)

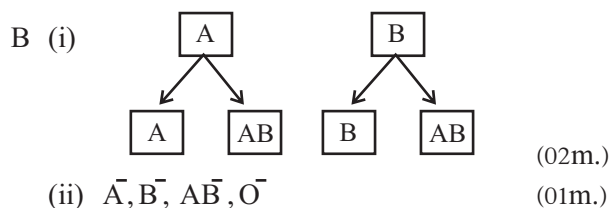


**Answer Sheet - Part I**

(01)	1	(02)	4	(03)	3	(04)	2	(05)	2	(06)	1	(07)	2	(08)	3	(09)	3	(10)	3	(11)	2
(12)	1	(13)	4	(14)	4	(15)	2	(16)	4	(17)	3	(18)	4	(19)	3	(20)	1				

**Part II**

01. A (i) Kerosine oil - bulb doesn't light (01m.)  
 Salt solution - bulb lights (01m.)
- (ii) Electrolyte - Salt solution, acidulated water, copper sulphate solution (01 mark if all 3 have written) (01m.)  
 Non electrolyte - Kerosine oil (01m.)
- (iii) B (01m.)
- (iv) Conduct electricity (01m.)  
 Do not react with the electrolyte (01m.)
- (v) A - The part which sink in the solution turns brown (01m.)  
 B - Evolve air bubbles (01m.)  
 Colour of the solution is reduced. (01m.)
- (vi) Sodium / Aluminium (01m.)  
 Sodium hydroxide (01m.)
- (vii) a. A piece of copper metal (01m.)  
 Iron nail (01m.)  
 b. Copper sulphate / Copper chloride / a solution of a salt of copper (01m.)  
 c. 1.5 V cell (01m.)
02. A (i) Cochlea (01m.)  
 (ii) Semi circular canals (01m.)  
 (iii) Keep the pressure in and out of the tympanic membrane equal (02m.)  
 (iv) 20 Hz - 20 000 Hz (01m.)  
 (v) A suitable answer (01m.)
- B. (i) Cow dung / Hag / rooten food etc., (01m.)  
 (ii) Bacteria (01m.)  
 (iii) Methane / CH<sub>4</sub> (01m.)  
 (iv) Carbon, Hydrogen / C, H (02m.)  
 (v) Obtain organic fertilizers, Manage wastes (01m.)
03. A (i) Right atrium, Right ventricle, Left atrium, Left ventricle (02m.) (If 2 chambers only 01 mark)  
 (ii) Tri cuspid valve (01m.)  
 (iii) superior vena cava, Inferior vena cava, pulmonary artery and pulmonary vein (02m.)  
 (iv) a. E  
 b. A / C / F (01m.)  
 (v) Semi lunar valves (01m.)



04. A. (i) Theory of special creation, spontaneous generation theory, Cosmozoic theory, Theory of biochemical evolution (02m.)
- (ii) Fossil, comparative anatomy, geographical animal distribution (02m.)
- (iii) Living fossils (01m.)
- B. (i) Minimizing the environmental pollution, entertaining, Experiments, study, protect water sources etc., (01m.)
- (ii) Natural processes (01m.)
- Human activities (01m.)
- (iii) a. biotic - abiotic (01m.)
- b. abiotic - abiotic (01m.)
- c. biotic - biotic (01m.)
05. A. (i) A - Protons (01m.)
- B - Electrons (01m.)
- C - Neutrons (01m.)
- (03m.)
- (ii) A and B (01 mark if both correct) (01m.)
- (iii) B / Electrons (01m.)
- (iv) 12 (01m.)
- B (i) Agricultural environments (01m.)
- Industrial environment (01m.)
- Settlements (01m.)
- (ii) Sinharaja / Kanneliya / Dediyaagala / Nakiyadeniya (01m.)
- (iii) Rivers (01m.)
06. A (i) a - Pseudopodia b - Muscular feet c - Wings / legs (02m.)
- d - Wings (02 marks if all correct 01 mark if 03 or 02 answers are correct)
- (ii) a - Q b - P (01m.)
- (iii) To a diagram in the page 91 in act 8.2 (01m.)
- or any suitable diagram (01m.)
- Label at least 2 parts (01m.)
- B (i) a - Tropic movements (01m.)
- b - Nastic movements (01m.)
- (ii) Nyctinastic movements (01m.)
- (iii) In-situ conservation (01m.)
- (iv) Sensitive zones of environment / strictly reserved forests / reserved forests (01m.) (11m.)

May

ONLINE CLASSES - 2025

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