



PROVINCIAL DEPARTMENT OF EDUCATION  
NORTHERN PROVINCE  
Diagnostic Test – 2021  
SCIENCE



Index No :- .....

Grade :- 9

Time :- 2. 00 hours

PART - I

❖ Select the most suitable answer.

01. The measuring unit of pressure is,

(1)  $\text{Nm}^2$  (2)  $\text{Nm}^{-2}$  (3)  $\text{m}^2$  (4) N

02. Which of the following is not included in protozoa?

(1) Amoeba (2) Paramecium (3) Euglena (4) Chlamydomonas

03. The method of separating various fuels from crude oil is.

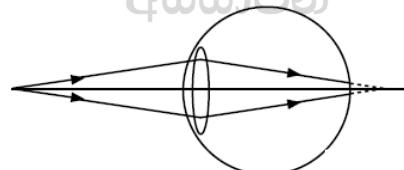
(1) Steam distillation (2) Crystallization  
(3) Fractional distillation (4) Vaporization

04. The micro- organism that is used as biological weapon is,

(1) *Streptococcus thermophiles* (2) *Anthrax bacteria*  
(3) *Lacto bacillus* (4) *Methano coccus*

05. The given eye defect and the lens used for its correction are respectively

(1) Short sight, concave lens  
(2) Short sight, convex lens  
(3) Long sight, concave lens  
(4) Long sight, convex lens



06. What are the blood types that can be transfused for a person with blood group B?

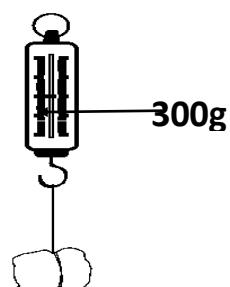
(1) A and B (2) A and O (3) O and B (4) B and AB

07. Which gas is contributed to make the early atmosphere of earth?

(1) Methane (2) Oxygen (3) Hydrogen (4) Water vapor

08. The given figure shows a stone which is hung and reading is taken. Weight of the stone is,

(1) 30N (2) 0.3N  
(3) 3N (4) 300N



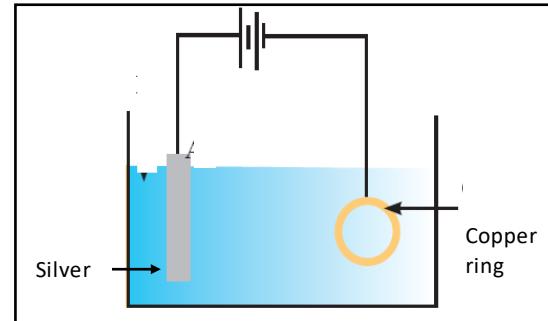
09. An endemic species of Sri Lanka is,

(1) Elephant      (2) Blue magpie      (3) Turtle      (4) Whale

10. The diagram shows the coating of a copper ring with silver. Which of the following could be

used as an electrolyte here,

(1) Silver  
(2) Copper  
(3) Silver cyanide solution  
(4) Copper sulphate solution



11. Which of the following is not a cause for the threats to bio diversity?

(1) Environmental pollution      (2) Spreading of invasive organisms  
(3) Increase in human population      (4) Studies related to bio diversity

12. An example of insitu conservation is,

(1) Wilpattu reserve      (2) Peradeniya park  
(3) Kumana      (4) All of them

13. Which of the following animal has binocular vision.

(1) Tiger      (2) Dog      (3) Loris      (4) Cow Loris

14. The disease that results from high blood pressure inside the eye due to the blockage of the flow of aqueous humour.

(1) Cataract      (2) Glaucoma      (3) Night Blindness      (4) Eye infection

15. Consider following statements regarding to the given figure.

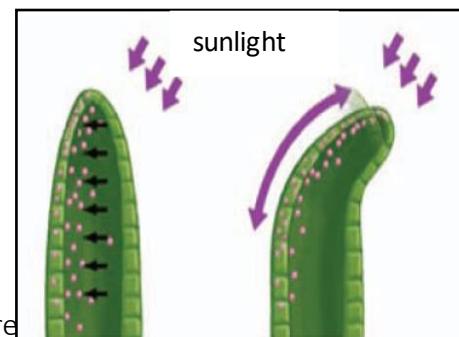
A- Auxin produced in the apex diffuses down wards.

B- Auxin concentrate more in the side of plant where intensity of light falls is high and concentrates less in the side of plant with low intensity of light fall.

C- The cells at which low intensity of light falls grow more than the cells at high intensity of light, which cases a curve of plant stem towards sun light.

Which of the above statements are correct?

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



16. Origin of life took place,

(1) 3 billion years ago	(2) 3.5 billion years ago
(3) 5.5 billion years ago	(4) 4.5 billion years ago

17. Mass of  $0.25 \text{ m}^3$  of liquid is 200 kg. Calculate the density of that liquid?

(1) $80 \text{ kg m}^{-3}$	(2) $800 \text{ kg m}^{-3}$
(3) $8000 \text{ kg m}^{-3}$	(4) $8 \text{ kg m}^{-3}$

18. The species of invasive organism is,

(1) Ganda pana /Napanni	(2) Parthenium
(3) Tank Cleaner fish	(4) All of them

19. Part of the ear that contributes to maintain the balance of body,

(1) Tympanic membrane	(2) Semi circular canal
(3) Cochlea	(4) Eustachian tube

20. The given statements are related to an ecosystem .

A- Interaction occur between living components as well as non-living components.  
B- The energy flows through one way stream and materials are recycled.  
C- There are constant interaction within the ecosystem which ensures the existence of biosphere.

Which of the above statements are correct?

(1) A and B	(2) A and C	(3) B and C	(4) A, B and C
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(20  $\times$  2 = 40 Marks)



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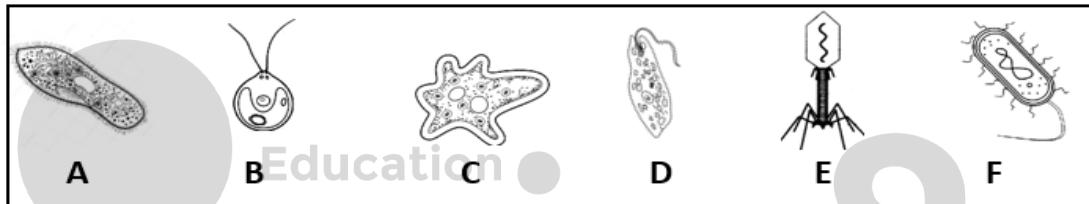
Index No :- .....

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Part II

Answer any five questions only.

01. (A) Micro – organisms have the ability to survive in different environmental conditions and modes of locomotion. Pictures Some of those micro –organisms are given below.



1. Identify the micro –organisms A,B,C,D,E and F.

A ..... B .....  
C ..... D .....  
E ..... F .....

2. Write the alphabet letter in the dotted line related to the micro –organisms, that shown the following features.

(a) Possess Chlorophyll .....  
(b) Display both living and nonliving characteristics .....  
(c) Live in hay rotten water .....  
(d) Only electron microscopic .....  
(e) .....

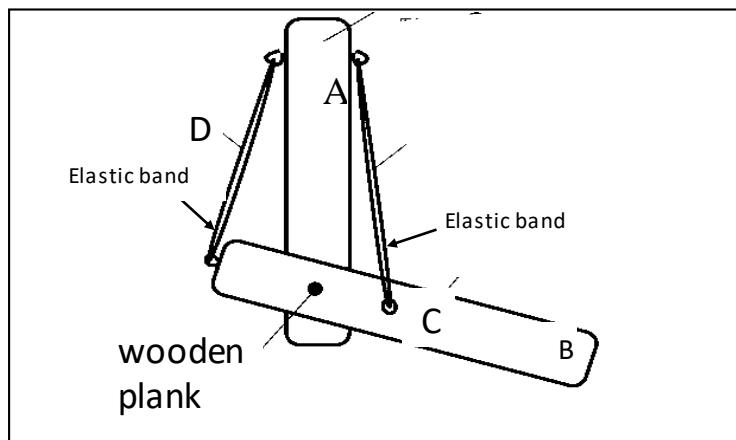
3. Give the structures of the following micro- organisms which are used for their locomotion.

A- .....  
B- .....

4. Micro- organisms are used in industries .Write 2 such industries?

.....  
.....

(B) The given diagram shows the model of human elbow.



1. Identify the parts of human elbow denoted by A, B, C and D.

A-..... B-.....

C- ..... D-.....

2. Name the following movements occur in plants .

(a) Stem tip growing towards the light .

.....

(b) Growth of the pollen along the tube towards the ovule.

.....

(c) Clinging of the coiling of tendrils in passion fruit with the support .

.....

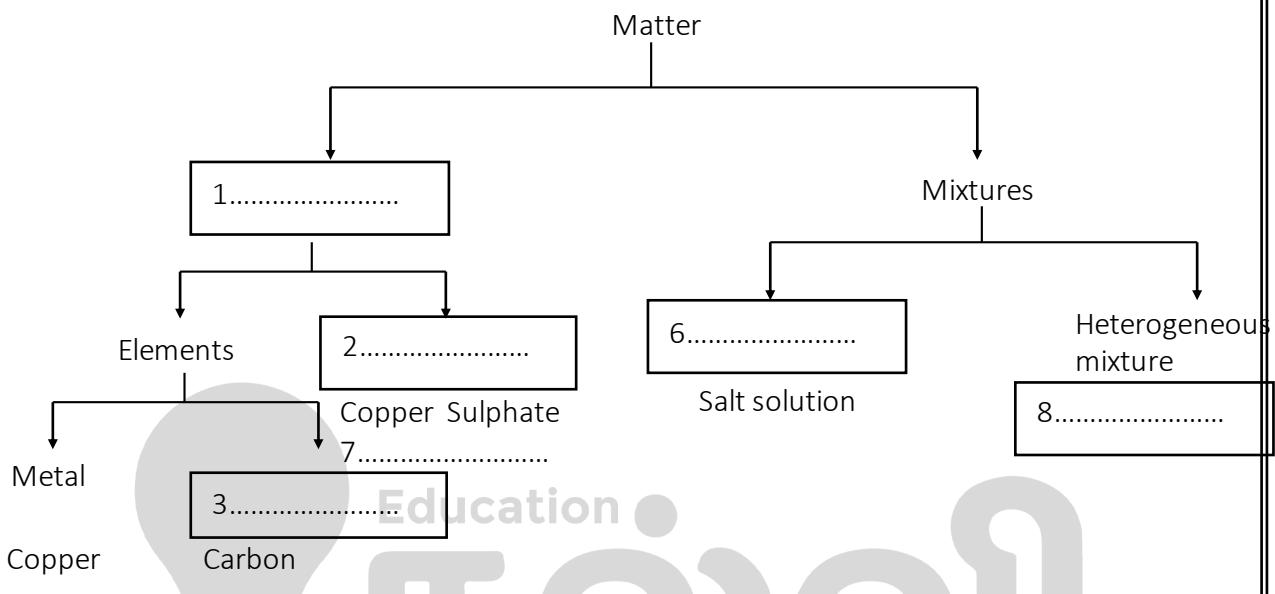
(f) Shrinking of mimosa leaves when the stimulus is touched .

(12 Marks)

02. In our day to day life, we use various chemical substances for various purpose. Some of them are given below.

Sulphur, Glucose, copper, Carbon, Salt solution, Copper sulphate, Mercury, pure water, Zinc, Calcium Carbonate, Fruit salad, ice cream, Aluminum, Compounds, Pure substances, Homogeneous mixture

Complete the following blanks by using the above given substances.



(2) a. Give a coloured compound from given substances?.....  
 b. What are the elements it contains? .....  
 c. Give the chemical Formula of it? .....

(3) Write the Latin name and symbol of copper?  
 Latin name..... Symbol.....

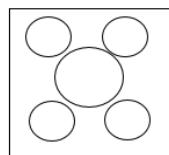
(4) Standard method of writing the element carbon is given below.



a. Atomic number of carbon .....  
 b. Mass number of carbon .....  
 c. Number of electrons in carbon .....

(5) The molecular structure of a Methane molecule is shown here.

Denote the atoms in the given structure.



(6) Complete the given table by using following words.

Homogeneous, Heterogeneous, pure substance, impure substance

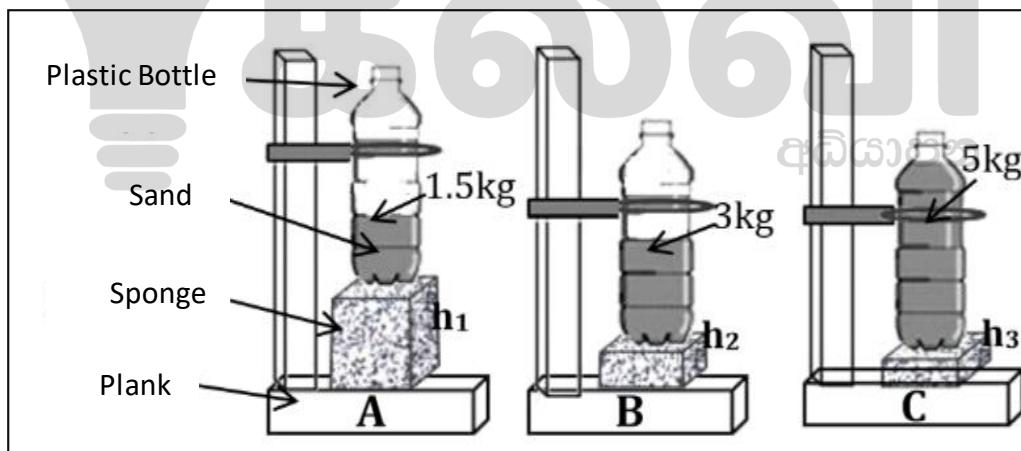
	<b>Mixture</b>	<b>Compound</b>	
1.			
2.			

(12 Marks)

03. (A) The given figure shows the setup that was arranged by a group of grade 09 students to study a factor affecting the solid pressure.

The reading of the height of the sponges which were affected by the pressure of the different masses of sand in the bottle are  $h_1$ ,  $h_2$  and  $h_3$ .

In the instances A, B and C the area of the plastic bottles, in contact with the piece of sponge is the same.



1. Which factor affecting the pressure is investigated by this setup?

.....

2. What is the other factor that affecting the solid pressure, except the factor investigated by this activity?

.....

3. In which piece of sponge was affected by high pressure?

.....

4. In the instances A, B and C the pressure exerted on the piece of sponge are  $P_A$ ,  $P_B$ , and  $P_C$ . Fill in the cases by using the symbols greater than ( $>$ ) or less than ( $<$ ).

$P_A$

$P_B$

$P_C$

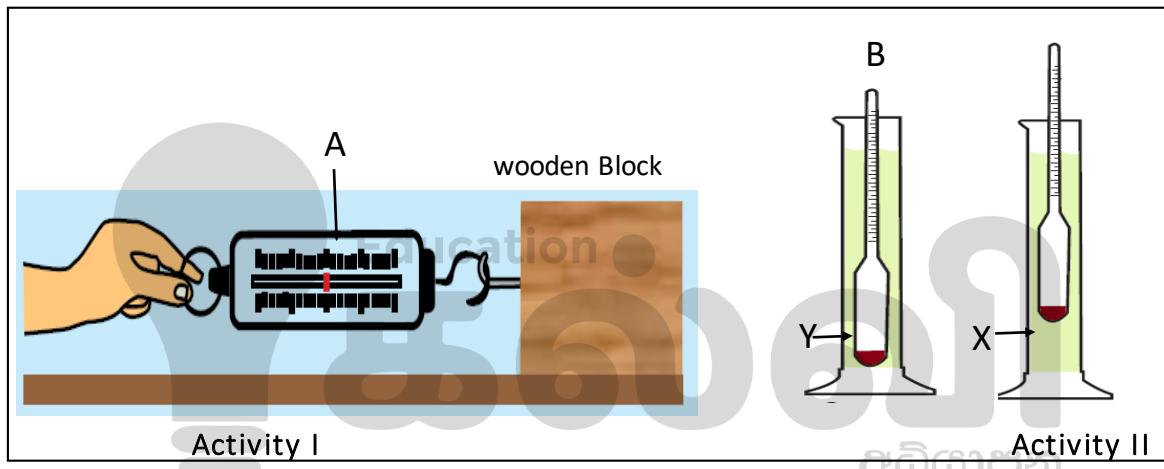
5. What is the quantity of force is applied in the instance A?

.....

6. What is the conclusion drawn by this activity?

.....

(B) The figure shows the activities that done by the students by using the instruments in the science laboratory.



1. Name the instruments A and B? A ..... B .....

2. Mark the forces that function in the activity I?

.....

3. Mass of wooden block is 200 g. It is placed on a table. The area of the block that touched on the surface of the table is  $0.2 \text{ m}^2$ .

Find the pressure exerted by the wooden block on the surface?

.....

4. Which liquid has higher density in activity II? .....

5. What is the strategy used in the instrument B that float vertically in the liquid?

(12Marks)

04. (A) Some components of human blood are given below.

Red Blood cells  
White Blood cells  
Platelets  
Glucose  
 $\text{Ca}^{2+}$   
Urea

From the above components ,

1. (a) Which type of corpuscle found in high amount in blood?

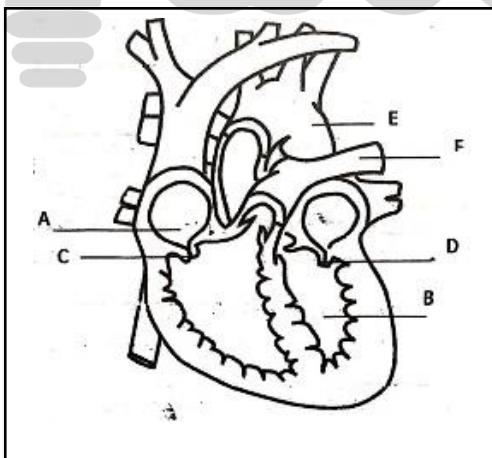
.....  
(b) State 2 components consist in blood plasma?  
.....  
.....

2. State the function of white blood cell?

.....  
3. The blood transfusion is taken place a person who has faced an accident and lost more blood.  
(a) Write 2 factors should be considered during the transfusion of blood?

.....  
(b) Write 2 physical fitness of the donor should be considered?  
.....

(B) Longitudinal section of the human heart given below.



1. Identify the parts A,B,C,D,E and F?

A-..... B-.....

C-..... D-.....

E-..... F-.....

2. How to call the blood vessel which carries the blood away from the heart?

.....

3. What are the blood vessels open into the part A?

.....

4. There are two valves between the atrium and ventricles. Give the names of the valves and state the function of it?

.....

5. Give 2 differences between the artery and vein?

.....

(12Marks)

05. (A) In agriculture field. Natural and artificial growth substances are used.

1. What do you mean by plant growth substances?

.....

2. Mention the growth substances related to following instances.

(a) Positive Phototropic movement

.....

(b) Ripening of fruits

.....

(c) Accelerate the cell division.

.....

3. State an instance that artificial growth substances are used in agriculture and write an example for it?

.....

4. Pruning of plant apex is practiced in horticulture to maintain bushy plants. State the reason for it?

.....

(B) There are many theories on origin of life on the earth were put forwarded by many scientists .

1. (a) Give 2 theories related to origin of life on the earth?

.....

(c) Which theory is accepted today for the origin of life on the earth?

.....

2. What is the first organism, continued from the first form of life on the earth that is a simple unicellular bacteria?

.....

3. (a) How does we call the process of gradual development from simple organism to modern complex organism?

.....

(b). Various evidences are considered when drawing conclusion about the above process stated in question (3) (a). Write an example for it?

.....  
4. Give 2 example for living fossils?

.....  
(12Marks)

06. (A) Ecosystem contains living organisms and non living components.

1. What do you mean by eco system?

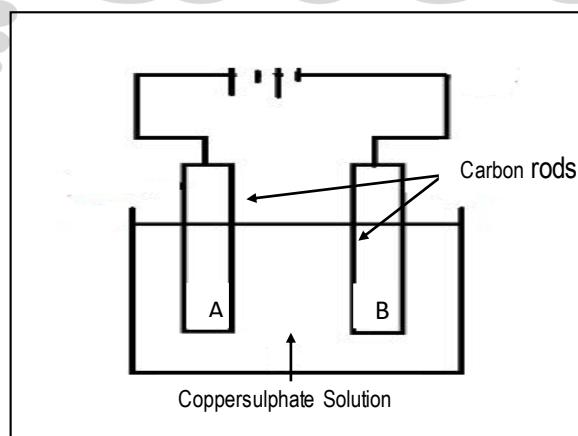
.....  
2. Give 2 examples for natural ecosystem?

.....  
3. Give an importance of tropical rain forest?

.....  
4. Which grass is very common in dry patana?

.....  
5. Write 2 example for the damana?

.....  
6. Give 2 environmental problems which causes the biodiversity degradation?



(B) The diagram shows the electrolysis of copper sulphate solution by using carbon electrodes.

1. From the electrodes A and B which functioning as positive electrodes ?

.....  
2. Give 2 observations that you will see a while after?

.....  
4. Give another electrode used as a substitute of carbon electrode?

.....  
( 12 Marks)