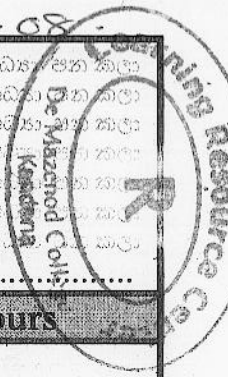




Negombo Education Zone

Second Term Evaluation 2024

Science



Index number:

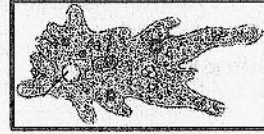
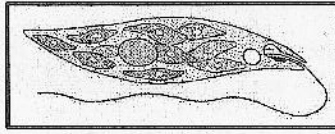
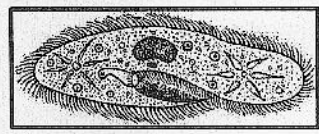
Grade 09	Paper I & II	Time 02 Hours
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Instructions:

- Answer all the questions in part I. Select the most appropriate answer and underline it.
- Answer 5 questions in Part II including 1st question.

Part I

01. Identify the microbial group to which the following organisms belong.



- i. Algae ii. Protozoa iii. Bacteria iv. Fungi

02. The element which is symbolized according to its Latin name is,

- i. Sodium ii. Sulfur iii. Iodine iv. Oxygen

03. The blood group considered as the “**universal donor**” in blood transfusion is,

- i. Blood Group O ii. Blood Group B iii. Blood Group A iv. Blood Group AB

04. The weight of a cuboid box is 200N. What is the Pressure exerted on the surface, if the box is kept on a surface area of 4m²?

- i. 25Nm⁻² ii. 20Nm⁻² iii. 50Nm⁻² iv. 800Nm⁻²

05. Select the plant growth hormone that supports fruit formation in off-seasons,

- i. Auxin ii. Cytocell
iii. Gibberellin iv. Indole Acetic Acid

06. Following are three statements expressed by a student about microorganisms,

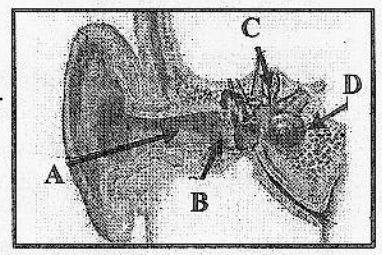
- A. Microorganisms are beneficial in medicine.
B. Microorganisms are essential for the well-being of Earth.
C. Microorganisms can adapt to various environments.

The **true** statements out of the above are,

- i. A and B ii. A and C iii. B and C iv. A, B and C

07. An example for an electrolyte is,

- i. Kerosene oil ii. Coconut oil
iii. Acidified water iv. Distilled water



08. Which part of the human ear does not contribute to hearing?

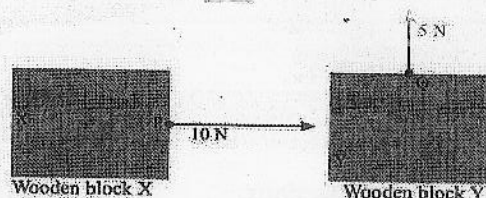
- i. A ii. B
iii. C iv. D

09. What is the blood vessel connected to the left atrium?

- i. Pulmonary artery ii. Pulmonary vein
iii. Superior vena cava iv. Aorta

10. Following figures show two situations where forces are graphically depicted. The true statements regarding the x and y forces are,

- The directions of forces X and Y are the same.
- The magnitudes of forces X and Y are equal.
- The magnitude of force Y is less than force X.
- The directions and magnitudes of forces X and Y are equal.



11. A component in bio gas is,

- Methane
- Hexane
- Benzene
- Acetylene

12. The Oral Polio Vaccine is made from,

- Weakened microorganisms
- Dead microorganisms
- Detoxified toxins of microorganisms
- A product of gene technology

13. The type of plant movement shown in the diagram is,

- Positive hydrotropism
- Positive thigmotropism
- Positive phototropism
- Haptonastic movement



14. Which of the following is not considered a living fossil?

- Ginihota (tree fern)
- Lingula
- Coelacanth fish
- Horse

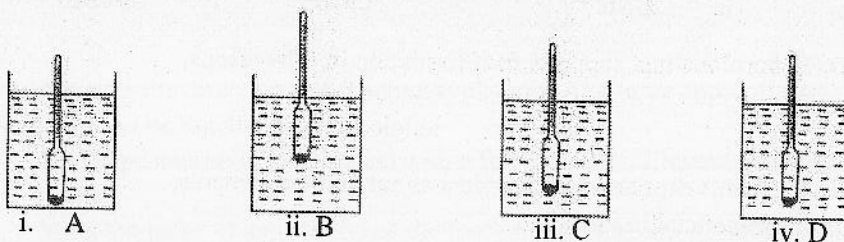
15. Identify the mixture that is not homogeneous.

- Sugar solution
- Cement mortar
- Glucose solution
- Salt solution

16. Which of these is not an application of electrolysis?

- Extraction of metals
- Painting walls
- Manufacture of caustic soda
- Electroplating

17. Following diagrams show how the four identical hydrometers have been submerged in four different liquids. Which liquid has the lowest density?

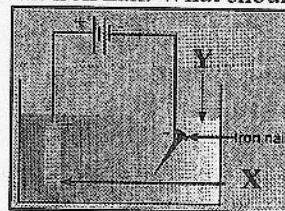


18. The technology used to metal extraction from low grades ores using micro-organisms is,

- Bio-controlling
- Bio-degradation
- Bio-leaching
- Bio-remediation

19. Following diagram shows a setup made to apply copper on an iron nail. What should be the materials X and Y?

- Iron nail, Ferrous sulfate solution
- Iron nail, Copper sulfate solution
- Copper plate, Copper sulfate solution
- Copper plate, Ferrous sulfate solution



20. Which answer best describes the “green concept”?

- Constructing buildings in a way to avoid the deforestation.
- Following guidelines and policies for maintaining goods and services in a way the environment is minimally damaged.
- Reducing the emission of greenhouse gases.
- Enhancing the utility of organic fertilizer and reducing the environmental damage.

B. There are support and movements of plants like animals.

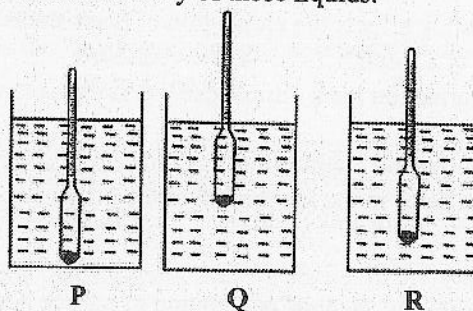
- i. Describe separately how woody and non-woody plants support themselves. (2 marks)
- ii. Define the term "Nastic movement"? (1 mark)
- iii. Name the following plant movements,
 - a. Plant roots moving towards the water source.
 - b. Plant apex growing away from the ground. (2 marks)

(Total Marks: 11)

04.

A. Density is a physical quantity that varies from liquid to liquid. Given below are the steps and the values obtained in an experiment conducted by a group of students in the school laboratory.

- Weigh the mass of a clean and an empty beaker - mass: 200 g
 - Pour 250 cm³ of distilled water into the same beaker and weigh the mass - mass: 450 g
- i. Find the mass of 250 cm³ of water in the beaker. (1 mark)
 - ii. What is the constant value obtained when the mass of water is divided by the volume of water called? (1 mark)
 - iii. Based on the information given, find the mass of 500 cm³ of water. (2 marks)
(Density of water = 1 gcm⁻³)
 - iv. Given below are three hydrometers immersed in three containers of fresh water, brackish water and marine water to find the density of those liquids.



- a. Based on the observations, identify the letters representing marine water and fresh water, respectively. (2 marks)
- b. Which hydrometer is used to determine the composition of rubber latex? (1 mark)

B. The existence of biodiversity in the environment is crucial for the sustainability of ecosystems.

- i. Mention a living and non-living interaction that can be identified in the environment. (1 mark)
- ii. Name a natural brackish water ecosystem. (1 mark)
- iii. Name a man-made ecosystem. (1 mark)
- iv. Write down an environmentally harmful activity associated with that ecosystem mentioned in (iii). (1 mark)

(Total Marks: 11)

05. State whether the following statements are correct "✓" or incorrect "X" by placing the respective symbol in front of each statement.

- i. Rhizobium bacteria living in the root nodules of legumes can fix atmospheric nitrogen. ()
- ii. The antibiotic Griseofulvin is used to kill bacteria. ()
- iii. Glaucoma is a progressive loss of vision due to damage to the optic nerve. ()
- iv. The ability to see the same area with both eyes is called binocular vision. ()
- v. When a knife is sharpened, the pressure exerted by it decreases, making it easier to cut. ()
- vi. The walls of veins are thicker than the walls of arteries. ()

- vii. Experiments by Louis Pasteur demonstrated that the theory of spontaneous generation was incorrect. ()
- viii. Plant cuttings use NAA (Naphthaleneacetic Acid) to root quickly. ()
- ix. The first living cell or protocell was a unicellular bacterium. ()
- x. Agroecosystems are man-made ecosystems. ()
- xi. Global warming is one of the major environmental crises of today. ()

(Total Marks: 11)

06. Choose the most appropriate word from the following words to complete the given sentences:

(gibberellin, water, hydrogen, brass, pulvinus, sodium chloride, Plaster of Paris, concave lenses, kerosene oil, sun, ciliary muscles, evolution)

- i. are the type of lens used as a remedy for short sight.
- ii. The is a source used for electricity generation according to the green concept.
- iii. aids in the support of non-woody plants such as balsam.
- iv. The curvature of the lens is controlled by
- v. A homogeneous mixture in the solid state is
- vi. An ionic compound is
- vii. When a glowing splinter is inserted into a tube filled with gas, it makes a pop sound.
- viii. mainly affects the elongation of plant stems.
- ix. To create a model of a fossil, ... is used.
- x. The gradual transformation from simple early organisms to the present complex organisms is called
- xi. Plants such as Mimosa and Kathurumurunga have a, located at each leaflet and petiole base, which helps in the movement of the plant.

(Total Marks: 11)

07.

A. By changing the direction and point of application of a force appropriately, tasks performed in daily life can be made easier.

- i. A man pushes an object to west with a force of 20 N. Illustrate this using a diagram. (2 marks)
- ii. Mark the point of application of the force in the diagram. (1 mark)
- iii. Define the term force? (1 mark)
- iv. What instrument is used in the lab to measure the magnitude of a force? (1 mark)
- v. Explain why force is considered a vector quantity? (1 mark)

B. Environmental pollution is increasing day by day due to various human activities.

- i. Name two greenhouse gases released into the atmosphere due to the burning of fuel. (2 marks)
- ii. Suggest two possible measures for promoting green transportation. (2 marks)
- iii. Mention one agricultural method that can be used to achieve high productivity in land management. (1 mark)

(Total Marks: 11)

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Part II

Instructions:

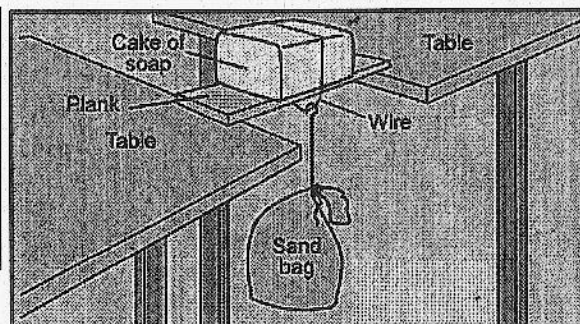
- Answer 5 questions including the first question.

01.

- A. Given below is an activity conducted by a group of grade 9 students involving cutting a bar of soap, related to the lesson on pressure exerted by solids. Answer the following questions accordingly.

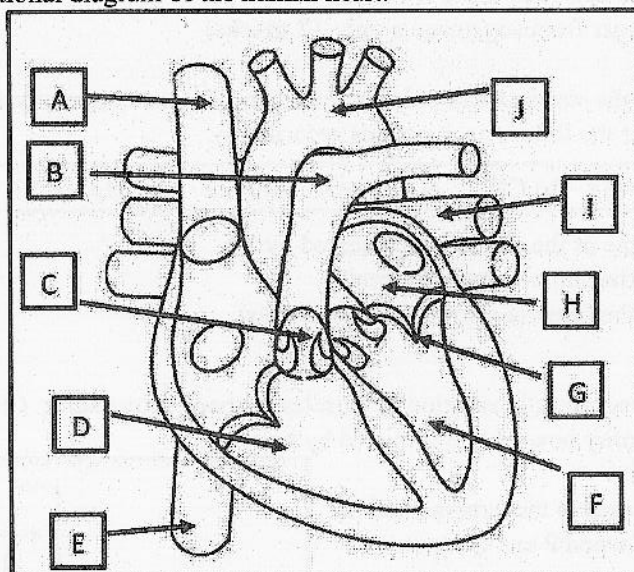
Materials used for the activity:

- A cake of soap
- A thin wire (0.2 mm in diameter)
- A thick wire (1.5 mm in diameter)
- A 20N sandbag
- A board of equal size to the base of the soap bar



- i. A 20N sandbag was used in both cases with the thin wire and the thick wire. What is the reason for this? (2 marks)
- ii. Using which wire was the cake of soap cut more easily? (1 mark)
- iii. Which wire exerted more force per unit area on the surface of the soap? (1 mark)
- iv. What conclusion can be drawn from the above activity? (1 mark)

- B. Below is a cross-sectional diagram of the human heart.



- i. Label the parts A, B, C, D, E, F, G, H, I and J. (5 marks)
- ii. Between which chambers is the bicuspid valve located? (1 mark)
- iii. Write two differences between arteries and veins. (2 marks)

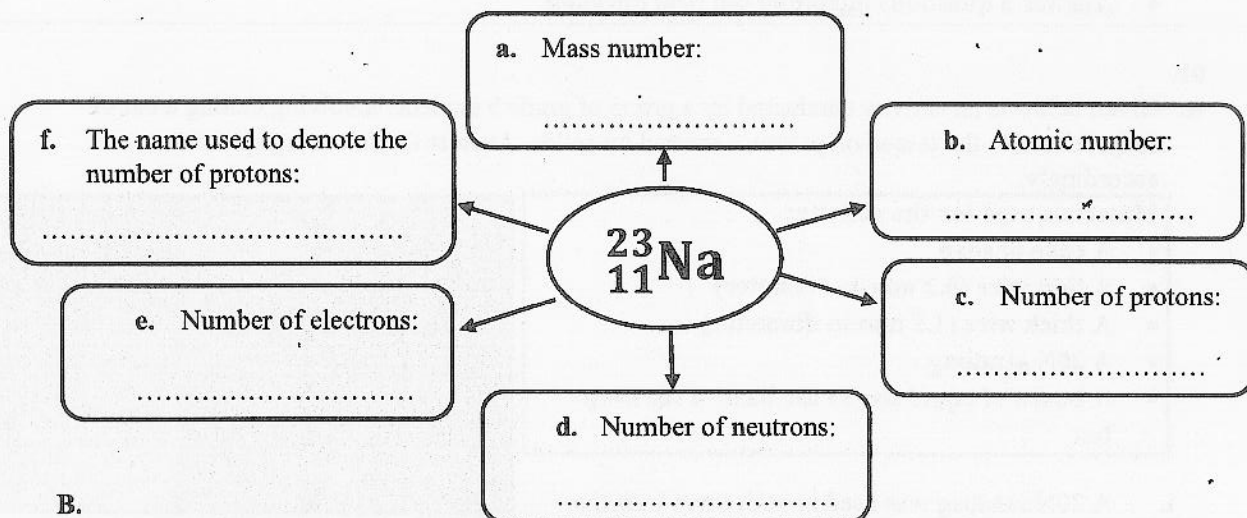
Arteries	Veins

- iv. Mention two points to consider during a blood transfusion. (2 marks)
- v. Mention the function of red blood cells. (1 mark)

(Total Marks: 16)

02.

A. Given below is a concept map with information about the element Sodium (Na). Fill in the blanks.
(3 marks)



B.

- Define what a mixture is. (2 marks)
- State one difference between homogeneous mixtures and heterogeneous mixtures. (1 mark)
- Write down the physical method used to separate the components of the following mixtures.
 - Removing stones from rice:
 - Separating gems from ores:
 - Separating various fuels from crude oil:
 - Extracting sugar from sugarcane syrup: (2 marks)

C. Given below are the standard symbols and formulas of some commonly used compounds and elements. Answer the following questions accordingly.

a) Mg b) CH₄ c) C₆H₁₂O₆ d) H₂O e) CH₃COOH f) O₂

- Write the name of the element represented by (a).
- Write down the homo-atomic molecule?
- Write down the formula for glucose. (3 marks)

(Total Marks: 11)

03. A. Vertebrates use bones in addition to muscles for body movements. Give below is an activity conducted to identify how a bone is moved by muscles.

- Which structures of the human hand do the pieces of wood P and Q represent? (1 mark)
- Elastic bands A and B correspond to which muscles? (2 marks)
- What happens when the muscle corresponding to the elastic band B contracts? (1 mark)
- Write two characteristics of a muscle. (2 marks)

