Provincial Department of Education
Northern Province

Third Term Examination - 2025

Grade - 9	Science	Time - 2.30 Hours
Index No:.....	34 E	

Part I

1. Underline the most appropriate answer.

1. Which valve is found between the right atrium and the right ventricle in the heart?

   1) Bicuspid valve 2) Tricuspid valve 3) Semilunar valve 4) Mitral valve

2. What is the main component of biogas?

   1) Hydrogen 2) Ethane 3) Methane 4) Acetylene

3. Which of the following is not a greenhouse gas that is responsible for increasing global warming?

   1) Carbondioxide 2) Methane 3) Oxygen 4) Acetylene

4. The Standard international unit of density is

   1) kg m^{-2} 2) g ml^{-1} 3) g cm^{-3} 4) kg m^{-3}

5. Which of the following describes the nature of the image formed by a plane mirror?

   1) Real image 2) Small in size 3) Equal to object size 4) Inverted

6. Which structure in the ear does not perform any function related to hearing?

   1) Semi-circular canals 2) Auditory nerve
   3) Cochlea 4) Ossicles

7. Which is used to obtain the yield of pineapples during the off - season?

   1) IAA 2) NAA 3) 2,4 DPA 4) 2,4,5 TPA

8. $^{35}_{17}Cl$ The number of electrons, protons and neutrons in an atom are, respectively.

   1) 17, 18, 18 2) 18, 17, 17 3) 18, 17, 18 4) 17, 17, 18

9. Which of the following is the method used to separate cinnamon oil from cinnamon leaves?

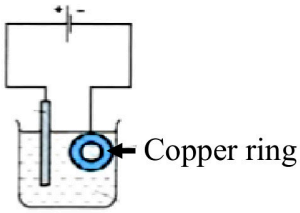
   1) Fractional distillation 2) Steam distillation
   3) Evaporation 4) Simple distillation

10. Which component in the blood decreases during dengue fever?

    1) Platelets 2) White blood cell 3) Red blood cell 4) Blood plasma

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11. The following figure shows gold plating on a copper ring, which of the following is used as the electrolyte?



1) Gold sulphate solution 2) Gold rod

3) Copper sulphate solution 4) Copper ring

12. Consider the following statement which conclusion can be drawn from them?

A - Windlass is an inclined plane type of machine.

B - The load is greater than effort when a single pulley is used

1) Only A is correct 2) Only B is correct 3) Both A and B are correct 4) Both A and B are wrong

13. Which of the following objects of equal mass can exert the greatest amount of pressure?

1)  2)  3)  4) 

14. Which particles are used in Nano technology

1) The Particles of 1 nm scale

2) The particles of 1 nm to10 nm scale

3) The particles of 1 nm to100 nm scale

4) The particles of 1 nm to1000 nm scale

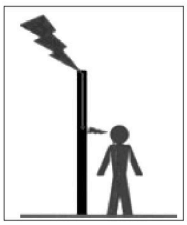
15. The number of plane mirrors used in kaleidoscope and periscope are respectively

1) 3, 2 2) 2, 3 3) 3, 3 4) 2, 2

16. In which of the following place is the grass species known as Mana found most abundantly?

1) Wet patana 2) Damana 3) Talawa 4) Dry patana

17. Which of the following is most likely method of lightning strike, as shown in the figure?



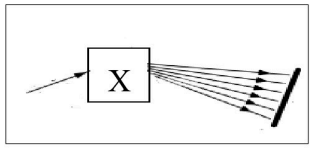
1) A direct strike 2) Slide flashes

3) A Contact voltage 4) Step potentials

18. Which plant is currently used as fuel?

1) Cotton 2) Pinus 3) Glyceria 4) sandalwood

19. Which optical device can be found in the system X ?



1) Prism 2) Plane mirror

3) Convex mirror 4) Concave miror

20. Which of the following is a tropic movement?

1) Blooming of flowers at sunrise

2) Shrinking of Agathi leaves when darkness falls

3) Growth of pollen along the tube towards the ovule

4) Shrinking of Mimosa leaves, when touched

(20x1= 20Marks)

Part - II - A

Answer all four structured questions in the space provided.

01. The Government is currently promoting the use of electric vehicles in our country. However, fuel-powered vehicles are still widely used. The following figures show both types of vehicles.



Figure I

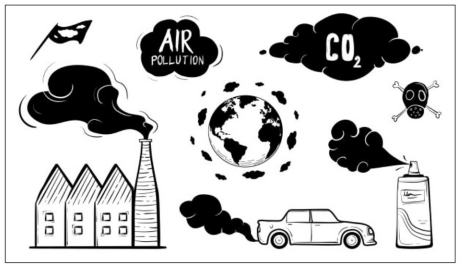


Figure II

1) Which figure can be considered as an example of green transportation .....(1Mark)

2) a) Which gas is released into the environment when vehicles operate using fuel?

.....(1Mark)

b) State one ecological problem caused by the release of the gas mentioned in question (a)?.

…….(1Mark)

3) What do you understand by green transportation?

.....

.....(2Marks)

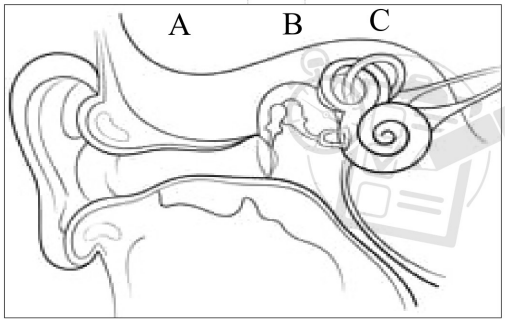
4) Mention one action you can take to contribute to the green transportation?.

..... (1Mark)

5) Referring to Figure II, mention two respiratory diseases that can be caused by environmental pollution? .....(2Marks)

(8Marks)

02. The following diagram shows the structure of the human ear, which is responsible for the sense of hearing in mammals.



1) What is the name of part B shown in the diagram?

.....(1Mark)

2) Which part of the ear helps to maintain equal air pressure on both sides of the eardrum?

.....(1Mark)

3) Which letter in the diagram represents the auditory nerve?

……...(1Mark)

4) What is the audible range of the human ear? .....(1Mark)

5) Select the appropriate answer to the following questions and underline it.

i) The pinna/ear lobe is made of **(Cartilage/ bone)** tissue

ii) **(Semi-circular canals/ Eustachian tube)** help to maintain the balance of body (2Marks)

6) Mention two defects of the ear? (2Marks)

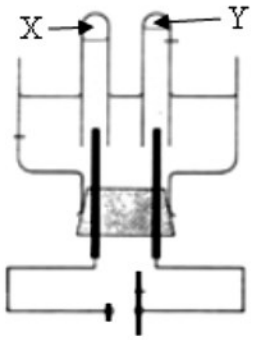
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(8Marks)

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03. The following figure shows the electrolysis of acidulated water.



1) Indicate the positive electrode in the setup. (1Mark)

2) Which gas is formed at the positive electrode?.....(1Mark)

3) How do you identify the gas generated near the negative electrode?

.....

.....(2Marks)

4) What is the ratio between the volumes of gases emitted in the positive and negative electrodes?

.....(1Mark)

5) Why is acid added to distilled water, during the electrolysis?

.....(1Mark)

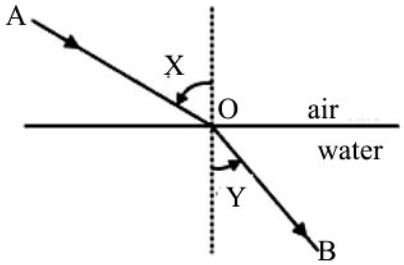
6) Mention two applications of electrolysis? (2Marks)

.....

.....

(8Marks)

04. **A**) The path way of refracted light ray passes from air into water is shown in the figure below.



1) What is the name of the ray AO?

.....(1Mark)

2) At which point does light refraction occur?

.....(1Mark)

3) What is refraction?

.....(2Marks)

4) What is the name of angle Y?.....(1Mark)

B) You may have noticed that when a loud sound is made in front of a large obstacle, it can be heard repeatedly.

1) What is the name of the unclear sound heard when the echo of a reflection reaches the ear before the original sound fades away?

.....(1Mark)

2) Name two places where echoes can be heard? (2Marks)

..... , ...

(8Marks)

Part - II - B

Answer only three questions from questions No. 5,6,7 and 8.

05. A) The Earth, which was once covered with a green blanket of vegetation, has now transformed into an environment filled with buildings.



1) What does this symbol represent? (1Mark)

2) What is the main objective conveyed by this symbol? (2Marks)

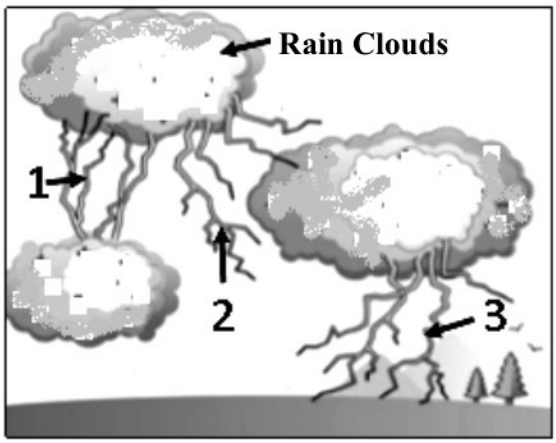
3) Name two greenhouse gases? (2Marks)

4) Tropical rainforests play a vital role in reducing greenhouse gas emissions.

(i) Name one tropical rainforest found in Sri Lanka. (1Mark)

(ii) State two main characteristics of the tropical rainforests. (2Marks)

B) It is often reported in various media that lightning causes significant damage in Sri Lanka. Study the following figure and answer the questions.



1) Identify the types of lightning indicated by numbers **1** and **2**. (2Marks)

2) Even though lightning and thunder occur at the same time, why is lightning seen before thunder is heard? (1Mark)

3) State the types of electric charges found at the top and bottom of rain clouds. (2Marks)

4) What device is used in tall buildings to prevent damage caused by lightning? (1Mark)

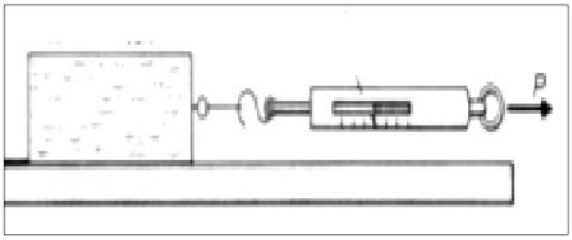
5) The lightning shown by number **3** strikes a tree and then a cow standing nearby.

(i) What type of lightning strike is this? (1Mark)

(ii) Why does lightning cause more damage to a cow than to a human? (1Mark)

(16Marks)

06. A) The figure shows a 10 kg wooden block placed on a table and pulled using a spring balance.



1) Mention one change that can occur When a force is applied to the object using the spring balance. (1Mark)

2) Represent the forces acting on the object using a line diagram. (2Marks)

3) If the area of the wooden block in contact with the table is 0.5 m^2, Calculate the pressure exerted by the block on the table. (2Marks)

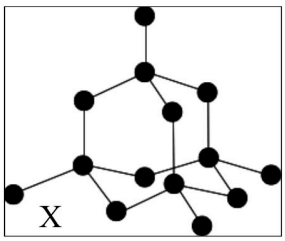
4) (i) If the height of this wooden block is 2m, find its volume? (1Mark)

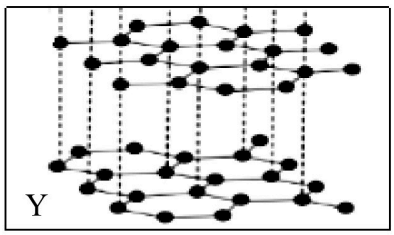
(ii) Using the volume calculated, determine the density of the block? (2Marks)

5) Name the instrument used in laboratories to measure the density of liquids. (1Mark)

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B) Carbon occupies a prominent place as the basic element for nano materials.





1) Name the allotropes X and Y. (2Marks)

2) What is the material used in the production of graphene from X or Y? (1Mark)

3) Name two raw materials used to produce activated carbon? (2Marks)

4) Name two fields where nano technology is used? (2Marks)

(16Marks)

07) A) The environment maintains a balance through interactions between living and non-living things, while natural disasters continue to affect life on Earth.
Observe the given vocabulary words and write them in the appropriate spaces.

(Mammoth, Earthquake, Ammonia, Bio-diversity hotspot, Tectonic plate movement, Supporter of combustion, Carbondioxide, Endermic species)

1) A factor that must be fulfilled for a fire to occur : .....

2) The Gas that causes global warming: .....

3) The Regions with a higher density of living organisms : .....

4) The fish 'Bandula pethiya' : .....

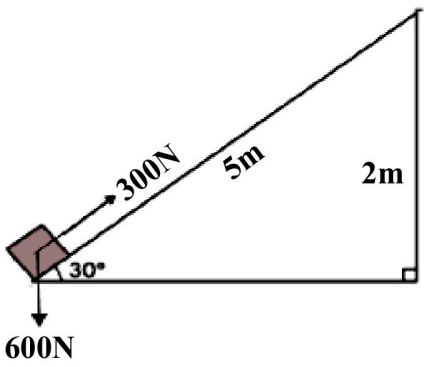
5) Ground vibration : .....

6) Destroyed by rising environmental temperatures: .....

(6 x 1 = 6Marks)

B) The figure shows an object being lifted up an inclined plane.

An object of weighing 600 N is pushed upwards using a force of 300 N



1) What is the mechanical advantage of the inclined plane?

2) What is the velocity ratio of the machine?

3) Calculate the efficiency of the machine?

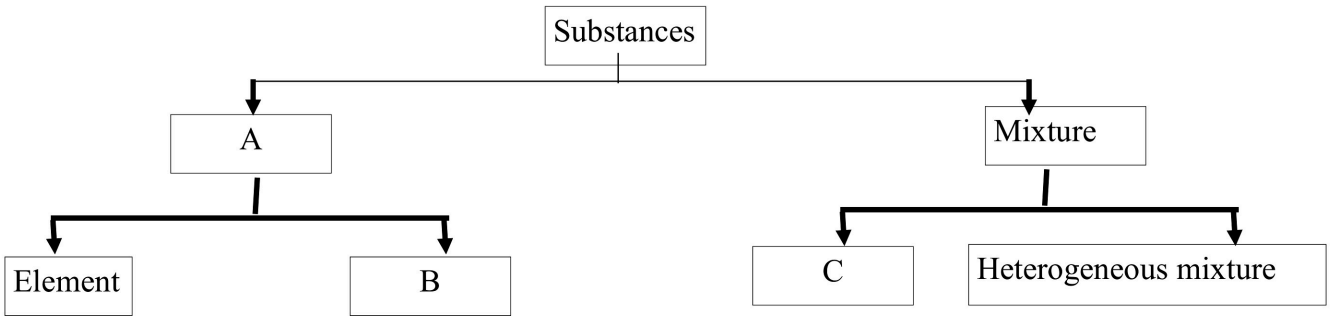
4) Write the equation used to find the work done by the machine (work-output)?

5) What is the work done on the machine (work-input)?

(2 x 5 = 10Marks)

(16Marks)

08. A) During a group activity, Students classified substances according to the following method.



1) Fill in the blanks A, B and C ? (3Marks)

2) Your teacher has given you acetic acid. Under which category, B or C, would you classify it? (1Mark)

3) What is the sugar found in sugarcane juice? (1Mark)

4) Sodium is an element with an atomic number of 11 and a mass number of 23. Write its standard chemical symbol. (1Mark)

5) Air is a mixture that contains nitrogen, oxygen, carbon dioxide, and methane. Which gases were present in the early atmosphere of Earth? (2Marks)

6) What is the currently accepted theory regarding the origin of Earth? (1Mark)

B) Humans fulfill various needs by utilizing the natural resources found on Earth. Air, water, minerals, plants, and timber play an important role among these resources.

1) Suggest a method to store rainwater during a drought season. (1Mark)

2) What do you understand by the term mineral? (2Marks)

3) What is the name of the layer of substances that contains gemstones and other rock fragments? (1Mark)

4) Mention two special features of gemstones? (2Marks)

5) State one method of preserving the timber? (1Mark)

(16Marks)

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