



Zonal Education Office - Jaffna

Second Term Examination - 2019

Grade: 09

Science

Time:
2 Hours

Index :

Part I

❖ Underline the correct answer.

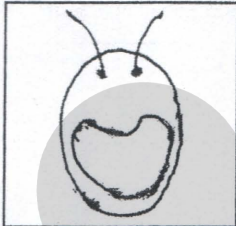
01. Which of the following is a SI unit of measuring force.

- 1) kgms^{-2} 2) N 3) Nm^{-1} 4) Nm^{-2}

02. Which of the following component of blood plasma presents in high percentage,

- 1) Glucose 2) Oxygen gas 3) Water 4) Fibrinogen

03.







Select the incorrect statement related to given micro organism.

- 1) Possess Chlorophyll
2) It belong to Algae category of micro organism.
3) Multi cellular
4) Use flagella for locomotion

04. Which of the following disease is controlled by vaccine that is synthesized by removing toxic components.

- 1) Influenze 2) Tetanus 3) Tuberculosis 4) Measles

05. A person having reduced vision, wearing spectacles for reading books. Which of the following lense is used in that spectacle.

- 1)  2)  3)  4) 

06.

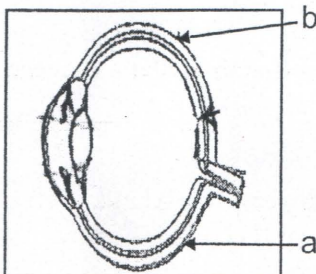


Diagram of human eye is given here. The function of part 'b' is

- 1) Protect the eye
2) Function as screen where the sharp Image formed
3) Supply essential nutrients to eye
4) Change the curvature of the eye lense.

07. Which group is considered as the first type of vertebrate on the earth

- 1) Amphibian 2) Reptelia 3) Aves 4) Fish

08. Force is considered as vector quantity. Because it has

- 1) Unit 2) Point of application
3) Magnitude and Direction 4) Shape

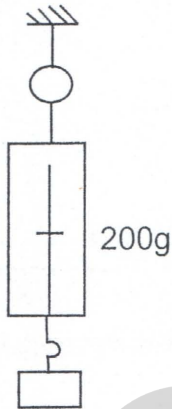
09. The false statement about the first living organism on the earth is

- 1) The first living organism appeared in the primordial soup
- 2) It was unicellular bacteria
- 3) It was an autotrophic organism
- 4) It was an anaerobic organism

10. The universal Donor and the universal recipient is

- 1) AB^-, O^+
- 2) O^-, AB^+
- 3) AB^+, O^-
- 4) O^+, AB^-

11. The weight of the given wooden block is



- 1) 20N
- 2) 2N
- 3) 0.2N
- 4) 2kg

12. In leptospirosis, which corpuscle percentage declines rapidly

- 1) Red blood cells
- 2) Basophils
- 3) Neutrophils
- 4) Platelets

13. A perpendicular 400N force was applied on an area of $5m^2$. What is the pressure exerted on the surface

- 1) 8 Pa
- 2) 16Pa
- 3) 80Pa
- 4) 160Pa

14. The growth of given plant shows the demonstration of



- 1) Negative phototropic movement
- 2) Positive phototropic movement
- 3) Positive geostrophic movement
- 4) Positive photonastic movement

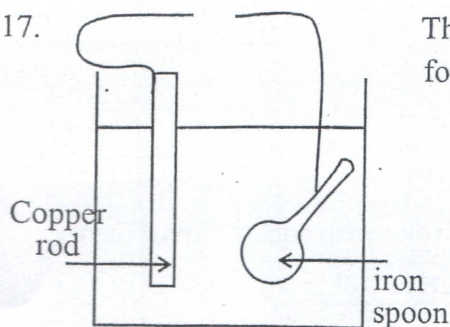
15. Which of the following ecosystem consists annual rainfall is about 4000mm, the top of the trees have become flat, plants are twisted stems and smaller leaves.

- 1) Tropical rain forest
- 2) Mountain forest
- 3) Dry mixed evergreen forest
- 4) Thorn bushes and scrub land.

16. What is the hormone used to induce flowering in pine apple in off seasons.

- 1) Naphthalene acetic acid
- 2) Cyto cell
- 3) Indole acetic acid
- 4) Gibberellins

17.



The Diagram shows to coat a iron spoon with copper. Which of the following statement is correct

- 1) Iron spoon must be kept as the positive terminal
- 2) Copper rod must be kept as the negative terminal
- 3) Copper sulphate solution must be taken as the electrolytes.
- 4) mass of the copper rod increase gradually.\

18. Which of the following is not caused for the biodiversity degradation.

- i) Increases of human population
- ii) Climate changes
- iii) Spreading of invasive organism in an ecosystem
- iv) The wild types of plants and animal are found in an ecosystem.

19. The range of audibility of the human ear is

- i) 2Hz - 20 000Hz
- ii) 200 Hz - 20 000Hz
- iii) 20 Hz - 20 000Hz
- iv) 200Hz - 2000Hz

20. The organ in the ear that maintain the balance of body is

- i) Semi circular canel
- ii) Cochlea
- iii) Ossicles
- iv) Tympanic membrane

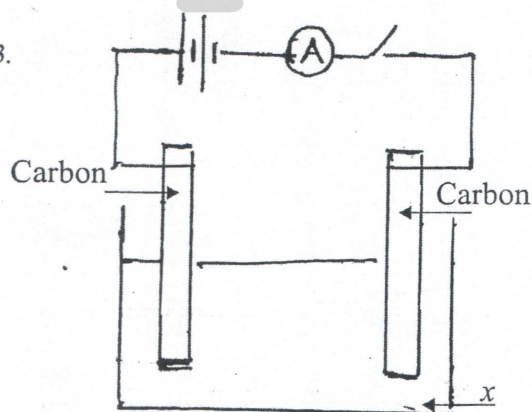
21. Which of the following is an endermic species to Sri Lanka

- i) Tank clear fish
- ii) Mannawa fish
- iii) Ashoka pethiya
- iv) Napunni

22. Which micro organism is functioning as bio fertilizer

- 1) Erwinia
- 2) Alternaria
- 3) Lactobacillus
- 4) Azotobactor

23.



Which of the following solution is used an 'X'. If get a movement in ammeter when close the switch.

- i) Distilled water
- ii) Salt solution
- iii) kerosene
- iv) Petrol

24. Which of the following organism survive even today retaining their physical properties un changed?

- i) Dolphine
- ii) Cockroach
- iii) Dinosaur
- iv) Blue magpie

25. What is the main objective of the green concept

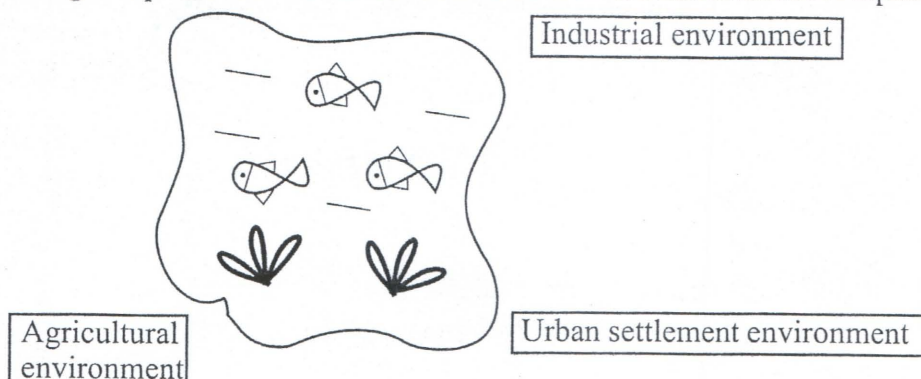
- i) Enhancing the plant cover
- ii) Raising food miles value
- iii) Consume water efficiently
- iv) Minimizing the emission of green house gas

(25 x 1 = 25 Marks)

Part- II

- ❖ Structured Essay Questions
- ❖ Answer all question

01. A) The given picture shows an urban settlement environment closed to aquatic environment



1) Write 2 examples for the interaction between living - living organisms in an aquatic ecosystem?

.....

.....

(1 Mark)

2) State 2 needs are fulfilled by above mentioned inter action in question no (i)

.....

.....

(1 Mark)

3) Write three features of ecosystem?

.....

.....

.....

(3 Mark)

B) Different hormones are used for plant growth and movement in agriclurual enviroment

1) Write suitable hormone of following activities

	Activity	Hormone
a.	Delay plant ageing
b.	Ripening of fruit
c.	Stimulate cell elongation in stem and root

(3Mark)

2. a) Which is most efficient and micro-irrigation method that used in agriculture?

(1 Mark)

b) Write 2 advantages of above mentioned method (In question no 2 (a))

(2 Mark)

C) Migration to cities on a variety of needs and urbanization in cities have resulted more improper urban settlement.

1) State 2 problems have arisen due to improper human settlement?

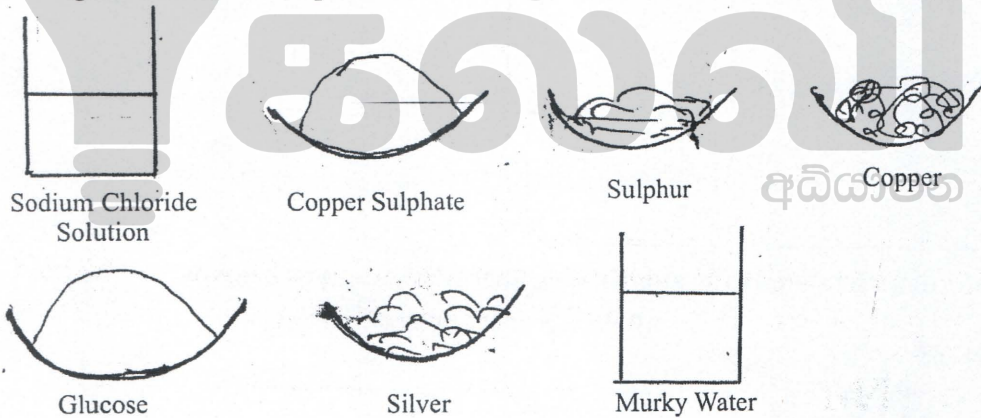
(2 Marks)

2) Write two principles should be abided by when construction green building?

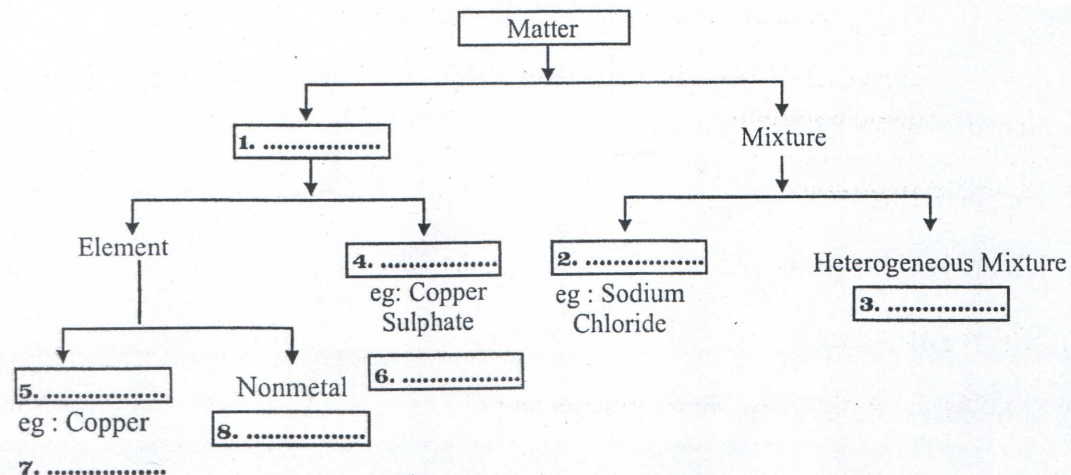
(2 Marks)

15

02. Following substances are kept in the common table of science laboratory.



i) The given concept map is drawn by students. Fill in the blanks by using given substances.



(04 marks)

ii) Which one is coloured compound from above?

.....
(1 Mark)

iii) Write the Latin name of copper and state the symbol of it

Latin name

Symbol

(1 Mark)

iv) State a different between homogeneous mixture and heterogeneous mixture

Homogeneous mixture	Heterogeneous mixture

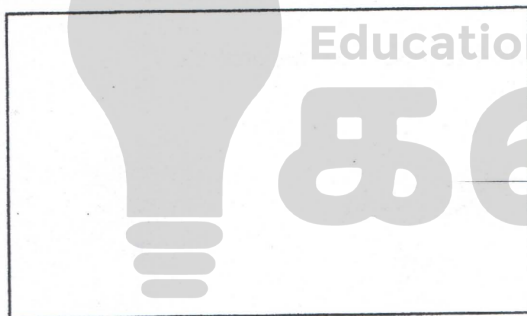
(1 Mark)

B) i) Homo - atomic molecules formed by the atoms of the same elements.

a) Write an example of homo-atomic molecule.

.....
(1 Mark)

b) Draw the structure of above homo-atomic molecule.



(1 Mark)

ii) The information related to an atom of element sodium is given below

$A \rightarrow 23$

Na

$Z \rightarrow 11$

a) Which one is denoted by A

.....
(1 Mark)

b) Which one is denoted by Z?

.....
(1 Mark)

C) An atom of element sodium

i) Number of protons

.....

ii) Number of electrons

.....

iii) Number of neutrons

.....

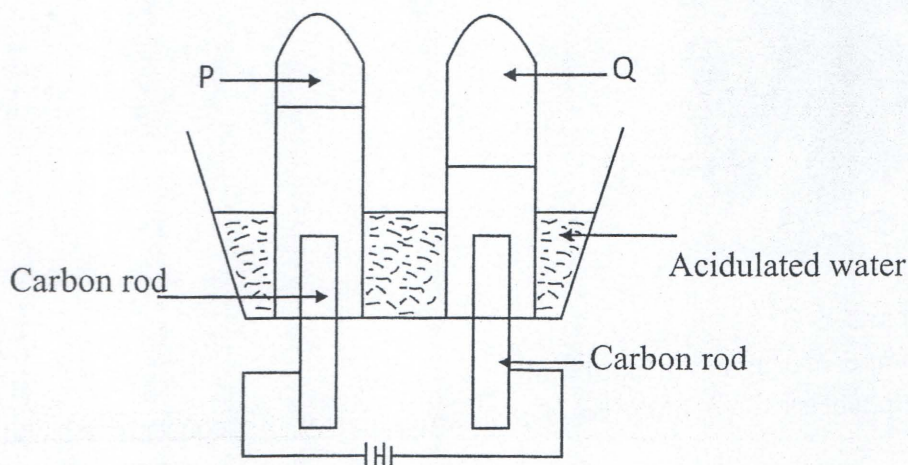
iv) How many un charged particles present it?

(4 Marks)

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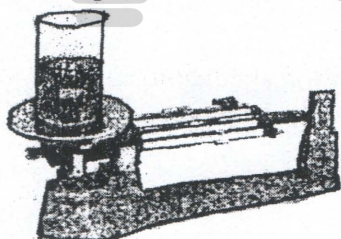
- ❖ Essay Question
- ❖ Answer any three questions only

03. A) The experiment set up was arranged to identify the changes brought about in acidulated water by an electric current



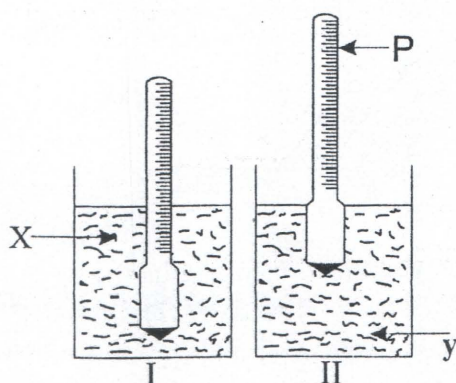
- 1) How to call the carbon rods that are used in this set up (1 Mark)
- 2) Write 2 observations when electric current is conducted through it? (1 Mark)
- 3) Which gas is evolved at positive electrode? (1 Mark)
- 4) How to identify the gas that is collected in Q (1 Mark)
- 5) What is the reason for that, acid is added to water? (1 Mark)
- 6) How to called the chemical change that occurs in this setup? (1 Mark)
- 7) State an instance where above mentioned chemical change [In question no (6)] is used? (1 Mark)

B) The experiment was arranged in laboratory to find the density.



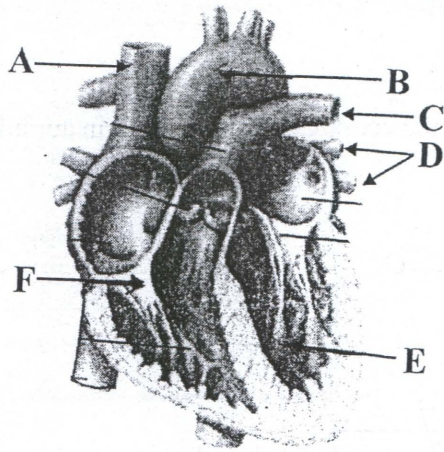
- 1) State the physical quantifies that should be measured to find density (1 Mark)
- 2) Name the instruments which are used to measure the above physical quantities? (1 Mark)
- 3) Calculate the density of 250ml Volume of water with 250g mass? ($1\text{ml} = 1\text{cm}^3$) (1 Mark)

4) The given setup is made for compare density of different liquids



- 1) What do you meant by density? (1 Mark)
- 2) Write the international measuring unit of density? (1 Mark)
- 3) Name the instrument P? (1 Mark)
- 4) What is the reason for the instrument P Floats vertically? (1 Mark)
- 5) In this setup, Which liquid has high density? (1 Mark)

04. A. The longitudinal section of the human heart is given below.



- 1) Name the parts A - Z? (3Marks)
- 2) Which chamber of heart has thickest wall? (1 Mark)
- 3) Write the alphabets letter of blood vessel that carries high oxygen concentrate blood? (1 Mark)
- 4) Blood vessel C carries blood towards which organ and why it carries towards that organ? (2 Mark)
- 5) Write the special feature of capillaries which is used to exchange the nutrients with cells by diffusion? (1 Mark)

B) Human has closed blood circulation

- i) What do you meant by closed blood circulation? (1 Mark)
- ii) Write the function of following components of blood
 - a) Red blood cell -
 - b) White blood cell -
 - c) Platelets -
 - d) Blood plasma -
- iii) What are the factors that should be considered while blood transfusion? (2 Mark)
- iv) How to call the process that happens during blood transfusion, the blood groups of donar and recipients are incompatible? (1 Mark)
- v) State two structural differences between arteries and veins? (2 mark)

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05. A) Invertebrates use muscles while vertebrates use both muscles and bones for their movement

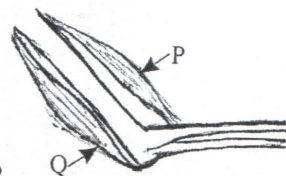
i) State a function of bones and muscles of vertebrates other than movement

ii) The picture shows how the elbow joint works

a) Name P and Q?

b) When extends the elbow what happens in P and Q?

c) Which feature of muscle cell is reason for the change you mentioned in Que (b)



(1Mark)

(2 Mark)

(1 Mark)

(1 Mark)

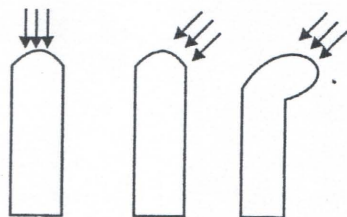
- B) Just like in animals, plants show movements and mechanical support, They do not show locomotion
- What are the chemical substances deposited in the wall of heart wood of plant is reason for the rigidity to woody plant? (1 Mark)
 - Write 2 main categories of movement in plants? (2 Marks)
 - Write the name of movement demonstrated the growth of the pollen the tube towards the ovule? (1 Mark)
 - Which part of the plants shows positive photo tropic movement (1 Mark)
 - How to call the movement due to the changes in turgor pressure with swelling at the base of petiole or leaflet? (1 Mark)
 - Write 2 plants which show nyctinastic movement (1Mark)
 - Name the algae type micro-organism which shows tactic movement (1 Mark)
- C) i) How to call the process that conservation of an organism in its living environment? (1 Mark)
- ii) Write two indigenous plants which can be protected by conserving sensitive zones of environment in Sri Lanka? (1 Mark)

15

06. A. There are many beliefs and theories on origin of life on earth

- Which theory on origin of life is accepted today. (1 Mark)
- How to appear the first living cell? (1 Mark)
- Which are considered as the first multicellular organism? (2 Mark)
- Fossils records are the main evidence of evolution. Write two examples for such fossil evidence? (2 Mark)
- The main reason for bio diversity is the process of evolution
 - How to call that, the diversity among the species? (1 Mark)
 - Write 2 advantages of above diversity? (2 Mark)
 - Due to the variation new species are produced. Which organelle of the cell contributes the variation? (1 Mark)

B. The picture shows that plant apex grows towards light



- Which plant growth substance stimulate the growth of plant apex towards light? (1 Mark)
- Which part of the plant produce above growth substance? (1 Mark)
- Which process of plant cells is stimulated the above growth substance? (1 Mark)
- Pruning of plant apex is practised in horticulture to maintain bushy plants what is the reason for it? (2 Mark)

15

