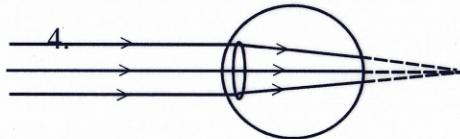
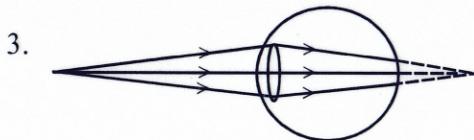
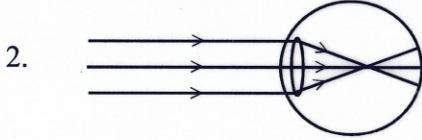
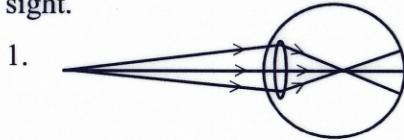


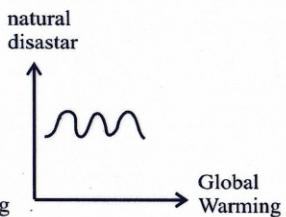
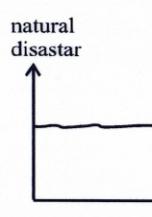
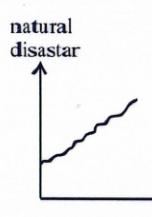
Part I



06. Which of the following is considered as modern theory of origin of life on the earth,

1. Life was originated from non-living things in a spontaneous manner
2. Life were created by a super natural power
3. Living organisms established on earth from a fallen meteor
4. Living organisms originated due to biochemical process

07. Which of the following graph correctly illustrate the relationship between natural disasters and the global warming.

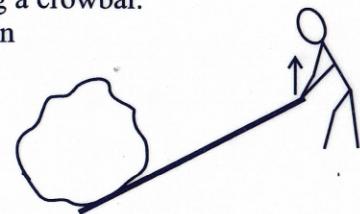


8. The diagram given below shows a person trying to remove a rock using a crowbar. The statement and the reason below related the above instance are given

Statement - Above simple machine belongs to the second order leader

Reason - The load located in between fulcrum and effort

1. Statement and reason are correct
2. Statement and reason are incorrect
3. Statement is correct but reason is incorrect
4. Statement is incorrect reason is correct



9. Find the mass of water completely filled to the tank of the volume of 5m^3 (density of water 1000kgm^{-3})

1. 0.5kg
2. 5kg
3. 500kg
4. 5000kg

10. Which of the following is correct about the component of blood and its function.

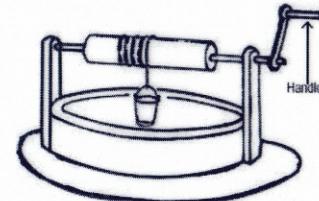
Component	Function
1. Red blood cell	transport nutrients
2. White blood cell	transport oxygen
3. Blood plasma	transport excretory matter
4. Platelets	transport enzymes

11. Not a homogeneous mixture is,

1. Mixture of sand and water
2. Mixture of glucose and water
3. Mixture of wheat flour and water
4. Mixture of ethanol and water

12. A simple machine used to lift up water is,

1. Lever
2. Inclined plane
3. Pulley
4. Axle and wheel



13. The process of microorganisms in environment which convert nitrogen gas to nitrate ion is,

1. Bio remediation
2. Bio leaching
3. Industrial micro biology
4. Biological fixation

14. Blood agglutination is occurred in a person after a transfusion of blood what can be the blood groups of recipient and donor of above transfusion

1. Recipient with blood group A and donor with blood group A
2. Recipient with blood group B and donor with blood group AB
3. Recipient with blood group AB and donor with blood group B
4. Recipient with blood group AB and donor with blood group A

15. Given below are some characteristics of microorganisms named as A and B.

Group of microorganism	Characteristics
A	Can be found unicellular and multicellular organisms Sexual structures can be seen with naked eye
B	No cellular organization Can be seen through electron microscope

A and B respectively are,

1. Fungi virus
2. Algae virus
3. Virus fungi
4. Bacteria fungi

16. Which of the following is correct consideration of nano+meter

1. $\frac{1\text{m}}{1000}$
2. $\frac{1\text{m}}{1000000}$
3. $\frac{1\text{m}}{10000000}$
4. $\frac{1\text{m}}{10000000000}$

17. The structure in human eye with light sensitive rod cells and cone cells is,
 1. scleritic layer 2. Choroid layer 3. Optic nerve 4. Retina

18. An example of positive geotropism movement occurred in plant is,
 1. Plant roots grow towards the earth 2. Growth of pollen tube towards the ovule
 3. Shrinking of memosa leaves due to touch 4. Plant apex bended towards the light

19. An example for inter relationship between biotic and Abiotic components of the eco system is,
 1. Weathering of rocks due to solar heat
 2. Plants absorb water from the soil
 3. Animals use plants as their habitats
 4. Animals contributes for dispersal of fruits and seeds

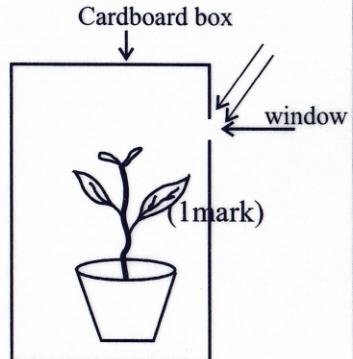
20. Given below are some definitions of green concept,
 A - minimamly harm to the environment during the maintaining of goods and services
 B - Increasing the harvest by using chemical fertilizers and pesticides in gases during the transportation
 C- minimize the emmision of green house gases during the transportation
 Which of above statements refared green concept,
 1. Only A 2. A and B 3. Only B 4. A and C

Part II

Answer five questions including the first one. The first question is compulsory.

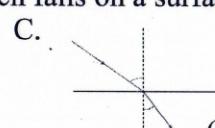
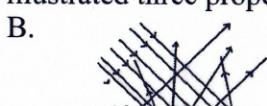
01. A. Given figure shows a setup prepared by students for an experiment.
 1. What is the change of plant that can be seen after few days? (1mark)
 2. Mention the type of plant growth substance caused for that change (1mark)
 3. Write the effect of gibberelins for the plant stem
 4. Name an artificial growth substance used as a broad leaf weedicide for paddy fields. (1mark)

B. Eye and the ear are main sensory organ of human. Complete following table regarding them.



Organ	Part	Function
Eye	Eye lens	a -
	B -	Transmit impulses to the brain
Ear	Cochlea	c -
	d -	directs sounds into the external auditory canal

C. In A,B,C figures given below illustrated three properties of light when falls on a surface.



1. Mention the property of light represented in figure C. (1mark)
 2. Which figure illustrated the property of light cause for the formation of images.(1mark)

3. Which figure denotes the property cause for seen an object in the environment (1mark)
4. State a character of image formed by a plane mirror (1mark)
5. Write the first law of refraction (2mark)
6. Mention the observable instance of sound reflecting (1mark)
7. Write an instance where reflecting of sound is applied usefully (1mark)

02. Given below are some properties of few elements and compounds used in school laboratory.

A element - Yellow coloured non metallic substance
 B element - Reddish brown metal existing as granules or sheets
 C compound - Blue coloured crystallic compound
 D compound - Abide as white coloured crystals or powder. It uses as a food flavour as salt.

1. Write the chemical name of D compound (1mark)
2. Write the symbol of A element (1mark)
3. Mention the names of elements combined to form C compound. (2mark)

B. The standard representation of an element is given below

27

Al

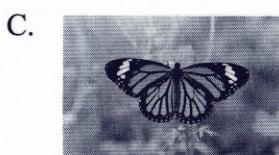
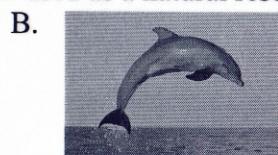
13

1. Write the mass number of it. (1mark)
2. Find the number of neutrons in the nucleus of this atom. (1mark)

03. Methane is a hetero-atomic molecule. Represent a methane molecule (2mark)

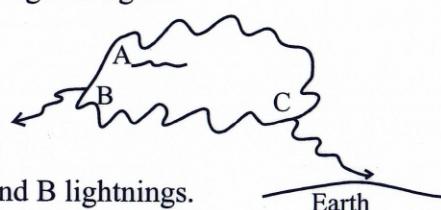
C. Water is an important natural resource to the life of organisms.

1. Mention a method practiced by man for sustainable use of water (1mark)
2. Name a rock and a mineral used as a natural resource (2mark)



- i. Write the name of locomotive appendages of A and B organisms separately (2mark)
- ii. Animals use muscles for their movements. Write a feature of muscle (1mark)
- iii. Name the type plant movement shown by coiling of tendrils in passion fruit with the support (1mark)

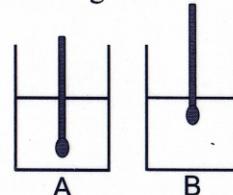
B. According to the ways of discharging charges accumulated in a cloud, there are three types of lightning represented in given figure



1. Name the types of A and B lightnings. (2mark)
2. State the most dangerous type of lightnings (1mark)
3. Write a precaution that can be taken to prevent accidents caused by lightnings (1mark)

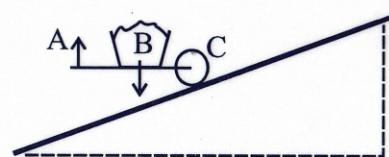
C. The way of comparing density of two liquids, which do not mix each other is given below

1. Name the instrument use to measure density of liquids (1mark)
2. Draw the way of appeared when this two liquids put into the same vessel (2mark)



04. A. The way of carrying a load of sand to a higher place by using simple machines is illustrated in the given figure

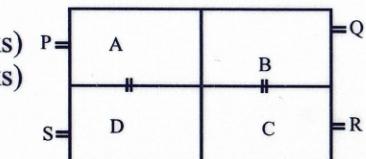
1. What is known as simple machine (1mark)
2. Wheelbarrow is a type of a lever. Mention another type of simple machine in the figure. (1mark)



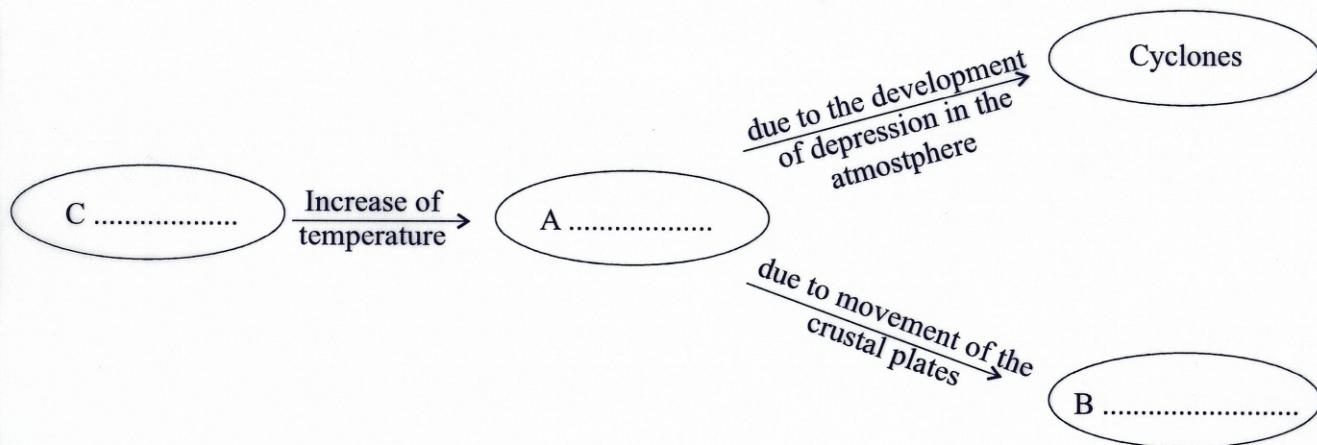
3. Mention the relevant letter for the places of effort, load and fulcrum in the wheelbarrow (1mark)
4. If the sand of 300N pushed by applying of 150N of force, calculate the mechanical advantage (2mark)

B. Four chambered human heart is sketch in the figure. Blood vessels connected are represented as P, Q, R, S.

1. Name a valve in between A and D chambers (2marks)
2. Classify above blood vessels as arteries and veins (2marks)
3. State a structural difference between an artery and a vein (1mark)



05. Following is a concept map designed by grade 9 student for a science lesson.



1. Mention the suitable answers for the blanks of A, B, and C (3mark)
2. Two identical ships X and Y were sailing in the sea ship X was sailing in Deep sea and ship Y was sailing in shallow sea during a tsunami condition.

- a. Which ship was damaged (1mark)
- b. Explain the reason (1mark)

B. In present most of countries conduct experiments of nano technology

1. What is the range of nano scale investigations. (1mark)
2. Mention a natural nano-system (1mark)
3. What is the element mainly used for nano technological activities. (1mark)

C. Life originated from a unicellular organism and developed into multicellular organisms on the earth.

1. Arranged following organisms according to the order of evolution



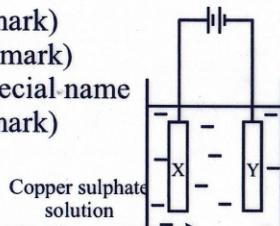
(1mark)

06. The diagram shows a setup prepared to apply copper on an iron nail.

1. If a copper sheet and an iron nail given, name the suitable material for X and Y electrodes (1mark)
2. State the name of this process (1mark)

3. Mention an application of this process (1mark)
 4. What precaution can be taken to obtain this process of high quality (2mark)
 5. Electricity conducts through copper sulphate solution. What is the special name given for such solution. (1mark)

B. Following is a displayed notice in a modern housing complex.



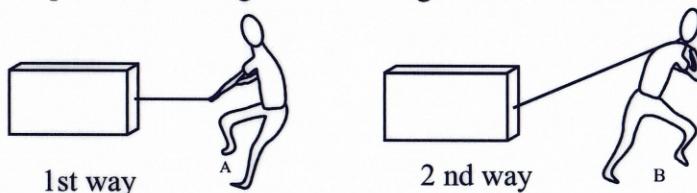
A	- Obtain electricity from solar energy	75%
B	- Obtain electricity from fossil fuels	25%
C	- Use of air condition ars	100%
D	- Use of rain water	80%
E	- Use of chemical fertilizers to the agricultural lands	80%

1. Classify above informations using the relevant letter

Blend with green concept	Do not blend with green concept

2. Mention an importance of the use of organic fertilizers (1mark)
 3. State a traditional agricultural practice used for pest control (1mark)
 4. Mention a suitable cultivation method for increase the total yield obtained from land according to land management (1mark)

07. A. The way of two persons drawing a 1000N weight wooden block as in the given ways



1. Which person feels more easy the task? (1mark)
 2. If A applied 500N of force, represent that force in graphically. (2mark)
 3. Due to the rope used by B, he felt a pain to the shoulder. Mention a change can be taken to the rope to relief from this pain. (1mark)
 4. If the contact area of the surface of the block is 0.5m^2 , find the pressure exerted on the floor. (2mark)

B. Given are the steps of an activity done to demonstrate the production of yoghurt

- 1 Step - Heat cows' milk in a temperature between $800\text{C} - 950\text{C}$
- 2 Step - Remove the cream
3. Step - Add sugar and gelatin
- 4 Step - Add yoghurt sample in 600C
- 5 Step - Put the mixture into cups, keep for 6,7 hours in $400\text{C}-450\text{C}$

1. Name the group of microbe used for this process (1mark)
2. Give the reason for heat milk sample at the 1st step (1mark)
3. Mention the reason for adding a yoghurt sample (1mark)
4. Micro-Organisms are used to produce antibiotics
 - a) What are known as antibiotics (1mark)
 - b) Mention another application of microbes in medical field (1mark)

**Science
Marking Scheme
Grade 10
Part I**

Q. no	Ans						
1	1	6	4	11	3	16	4
2	4	7	1	12	4	17	4
3	2	8	1	13	4	18	1
4	3	9	4	14	2	19	2
5	2	10	3	15	1	10	4

Part II

01. A. 1. Plant apex bended towards the window (1mark)
 2. Auxin (1mark)
 3. Elongation of plant stem (1mark)
 4.2.4 DPA/2,4 Dichloro phenoxyacetic acid (1mark)
 2,4 - TPA/ 2,4,5 Trichloropheoxy acetic acid (1mark)

B. 1. a. formation of images on retinina (1mark)
 b. Optic nerve (1mark)
 c. Starting nerve impulses (1mark)
 d. ear lob Transmit impulses to the brain (1mark)

2. A. (1mark) 3. For suitable answer (1mark)

C. 1. Refraction of light (1mark)
 2. A (1mark) 3. B (1mark)
 4. Upward/ Equal to the height of the object virtual (1mark)
 5. Correct answer of 1st law (2mark)
 6. Echo/ Resonance (1mark)
 7. For suitable answer (1mark)

02. A. 1. Sodium chloride (No marks for formula) (1mark)
 2. S (1mark) 2. Copper/Sulphur/Oxygen (if 3 words are correct give 2 mark) (2mark)

B. 1. 27 (1mark) 2. 14 (1mark) 3.

C. 1. For suitable answer (1mark) 2. For two correct answers (1mark)

03. A. 1. A- Cilia B. Flippers (2mark)
 2. Muscles cells can be seen as fibers/ Ability to relax and contract /abilities to reach the original position after relax and contract (1mark)
 3. Positive thigmotropism (1mark)

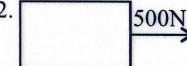
B. 1.a) cloud to cloud lightning (2mark)
 2. Cloud to ground lightning (1mark)
 3. For suitable answer (1mark)

C. 1. Hydrometer (1mark)
 2. (2mark)

04. A. 1. A strategy used to work easier (1mark)
 2. Inclined plane (1mark)
 3. A, B, C - (If three letters are correct 2 marks, two for 1 mark)
 4. Mechanical advantage =
$$\frac{\text{effort}}{\text{load}} = \frac{300\text{N}}{150\text{N}} = 2$$
 (1mark)

B. 1. tricuspid valve (1mark)
 2. Arteries - S,R (1mark) Vains - P.Q (1mark)
 3. For correct structure difference (1mark)

05. A. 1.C - Dry environmental conditions / Lightning/ Human activities (1mark)
 B- Earth quakes (1mark)
 A - Natural disasters (1mark)

	2.a. Y (1mark)	b. For suitable explanation (1mark)	
B	1.1-100nm		(1mark)
	2. Lotus leaf, living cell, wings of insects		(1mark)
	3. Carbon/C		(1mark)
C.	1. Bacteria - Fish - amphibian - Reptiles		(2mark)
	2. i. Evidence from geographical distribution of animals		
	ii. Evidence from comparative anatomy		
	iii. Evidence from fossil study		(1mark)
06.	A. 1.x - copper plate	Y - Iron nail	(2mark)
	2. Electro plating		(1mark)
	3. Reduce blue colour of the solution		(1mark)
	4. For correct answer		(1mark)
	5. For correct answer		(1mark)
	6. Electrolysis		(1mark)
B.	1. Relating with green concept	Do not relate with green concept	
	A, D	B, C, E	
	For correct separation		(1mark)
	2. For suitable answer		(1mark)
	3. For suitable strategy		(1mark)
	4. Multi crop cultivation/Crop rotation/Using bio technology		(1mark)
07.	A. 1. Person B		(total 11)
	2. 		(1mark)
	(For illustrating line of action point of application and direction)		
	3. Use thick string/ make border/ increasing the surface area		(1mark)
	4. $P = F/A$		(1mark)
	$= 1000N/0.5$		(1mark)
	$= 2000pa$		(1mark)
B.	1. Bacteria		(1mark)
	2. Destroy harmful bacteria		(1mark)
	3. Added bacteria which help to produce bacteria which help to produce curd.		(1mark)
	4. a) Chemicals produced in the body of a microbe to destroy another microorganism		(1mark)
	b) For correct answer		(1mark)
			(total 11)