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Gampaha Education Zone

දෙවන වාර ඇගයීම - 2025

Second Term Evaluation - 2025

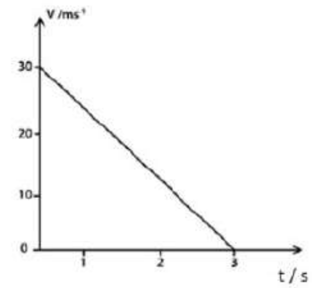
இரண்டாம் தவணைப் பரீட்சை - 2025

ශ්‍රේණිය Grade	11	විෂයය Subiect	**Science I**	කාලය Time	**1 Hr**
නම பெயர் **Name**					

- **Answer all the questions.**
- **In each of the questions 1 to 4, pick one of the alternatives 1,2,3,4 which you consider is correct or most appropriate.**

1) What is the descending order of elements that has been most helpful in creating living organisms?
   (i) O, H, N (ii) C, O, H (iii) O, C, H (iv) C, O, N

2) The figure shows a velocity time graph of an object projected upwards at a velocity of $30ms^{-1}$. The maximum height reached by the object is?
   (i) 22.5m (ii) 45m (iii) 67.5m (iv) 90m



3) If the formula of magnesium nitrate is $Mg(NO_3)_2$, what is the formula of sodium nitrate?
   (i) $Na_2(NO_3)_2$ (ii) $NaNO_3$ (iii) $Na(NO_3)_2$ (iv) $NaNO_3$

4) A deficiency of which of the following element in the body caused anemia, sleepiness and weaknesses in mental development?
   (i) Iron (ii) Phosphorus (iii) Calcium (iv)Iodine

5) The standard unit of measurement for Force is,
   (i) Nm^{-1} (ii) ms^{-2} (iii) $kgms^{-1}$ (iv) $kgms^{-2}$

6) Select the pair of elements that has the highest tendency to form positive ions.
   (i) Na and Mg (ii) Cl and O (iii) O and Na (iv) Na and Cl

7) The correct name given to the coconut plant according to the rules of binomial nomenclature is?
   (i) Cocos Nucifera
   (ii) <u>Cocos</u> <u>nucifera</u>
   (iii) coco nucifera
   (iv) <u>cocos</u> <u>nucifera</u>

8) When a sound wave emitted from a loudspeaker propagates through the air, what happens to its physical quantities?
   (i) Reduce frequency
   (ii) Reduce the velocity
   (iii) Reduce wave length
   (iv) Reduce the amplitude

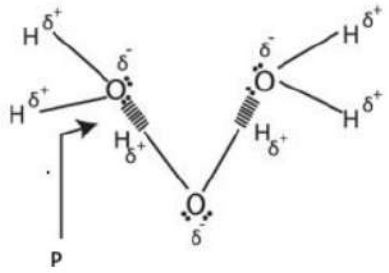
9) Select the incorrect statement of the followings. (relative atomic mass of Mg is 24)
   (i) There are 6.022×10^{22} atoms in 24g of Mg
   (ii) There are 0.5mols in 12g of Mg
   (iii) There are 6.022×10^{23} moles in 24g of Mg
   (iv) There are 12.044×10^{22} atoms in 48g of Mg

10) The figure shows a set up designed to identify a factor required for photosynthesis. What could be the solution X?
   (i) Na_2CO_3 (ii) NaCl (iii) KOH (iv) KNO_3

11) Which of the following does not affect the limited frictional force?

(i) Area of contact surface
(ii) Perpendicular reaction
(iii) The nature of contact surface
(iv) Weight of the object

12) What is the bond type represented in the following figure?



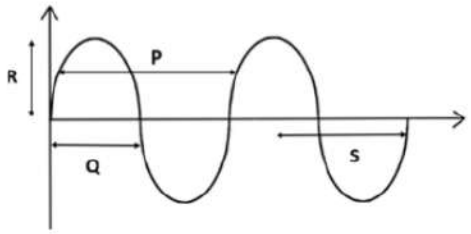
(i) Ionic bonds
(ii) Covalent bonds
(iii) Donor bonds
(iv) Inter molecular bonds

13) In which of the following cells contain multinucleous.

(i) Red blood cells
(ii) White blood cells
(iii) Skeletal muscle cells
(iv) Smooth muscle cells

14) Which letter indicates the wave length of the wave given in the graph?

(i) P (ii) Q (iii) R (iv) S



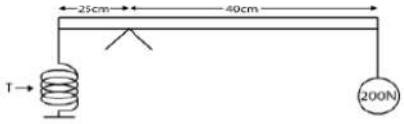
15) Which mixture is considered as homogeneous mixture?

(i) Clay solution/ mixture
(ii) Salt solution
(iii) Laundry blue solution/ mixture
(iv) Soap solution

16) Common inherited characteristics in the human spices is?

(i) Muscle growth in the arms
(ii) Syndactyly
(iii) Polydactyly
(iv) The ability to fold tongue or not

17) Tension of the spring balance is,



(i) 220N (ii) 320N (iii) 440N (iv) 800N

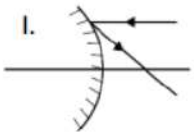
18) Some of the energy produced by cellular respiration is released as heat while rest is stored as chemical energy in the form of ATP. What is <u>not</u> a function of ATP?

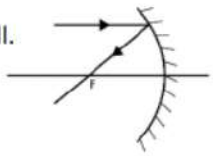
(i) Producing energy
(ii) Store energy
(iii) Act as a energy transporting agent
(iv) Releasing energy

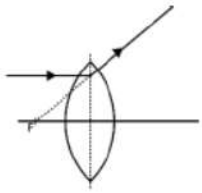
19) What factor does not affect the rate of reaction between two reactants in aquous medium?

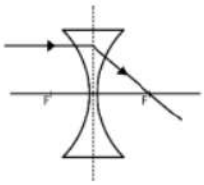
(i) Temperature
(ii) Catalyst
(iii) Pressure
(iv) Concentration of reactants

20) Underline the correct ray diagram.

I. 

II. 

III. 

IV. 

21) When 100cm^3 of a very dilute solution of NaOH were mixed with 100cm^3 of a very dilute HCl, the temperature of the mixture rose from 20^{0}C to 35^{0}C. Calculate the heat change occurred during the reaction. (specific heat capacity of water 4200Jkg^{-1})

(i) 2100J (iii) 8400J

(ii) 4200j (iv) 16800J

22) Select the answers that correctly describe the characteristics of the tissues given below.

Smooth muscle	Skeletal muscle	Cardiac muscle
(i) Unbranched (ii) Intercalated discs are absent (iii) Uninucleate (iv) involuntary	Branched Intercalated discs are present Multinucleate voluntary	Branched Intercalated discs are present Multinucleate involuntary

23) What is the kinetic energy of an object with a mass of 500g when it moves at a velocity of 6ms^{-1}?

(i) 3J (ii) 6J (iii) 9J (iv) 21J

24) Select the answer given in ascending order of the ability to release OH in the aquous medium.

(i) $H_2SO_4 < CH_3COOH < Ca(OH)_2 < NaOH$

(ii) $NaOH < Ca(OH)_2 < CH_3COOH < H_2SO_4$

(iii) $CH_3COOH < H_2SO_4 < Ca(OH)_2 < NaOH$

(iv) $Ca(OH)_2 < NaOH < H_2SO_4 < CH_3COOH$

25) When you get a thorn stuck in your foot, your foot will full away. What is the correct order in which the nerve impulse travel?

(i) Effector → Motor neuron → sensory neuron → receptor

(ii) receptor → sensory neuron → inters neuron → Motor neuron → Effector

(iii) Effector → sensory neuron → inters neuron → Motor neuron → receptor

(iv) receptor → Motor neuron → inters neuron → sensory neuron → Effector

26) When you convert a temperature of 373k to Celsius scale is,

(i) 0^{0}C (ii) 100^{0}C (iii) 273^{0}C (iv) 373^{0}C

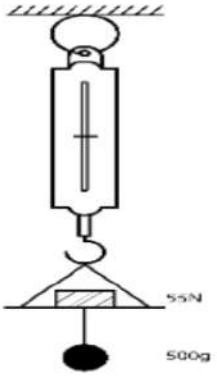
27) The mass of glucose that should be taken to prepare 500cm^3 of 1moldm^{-1} $C_6H_{12}O_6$

(i) $\frac{1000}{180\times0.1}\times 500$

(ii) $\frac{1000\times180}{500\times0.1}$

(iii) $\frac{180\times0.1}{1000}\times 500$

(iv) $\frac{180}{1000}\times\frac{0.1}{500}$



28) Which statement is correct in relation to human ovule?

(i) It is produced in the follicle cells in the ovary.

(ii) It consist of 23 pair of chromosomes.

(iii) Fertilization of ovule takes place in the uterus.

(iv) Implantation of ovule takes place at the upper region of the fallopian tube.

29) A weight of 55N was placed on the spring balance shown in the figure. When a student hung a 500g iron ball what would be the new reading of the spring balance.

(i) 50N (ii) 55.5N (iii) 60N (iv) 555N

30) What is the method of artificial propagation that can obtain a genetically identical group of clones from a plant?

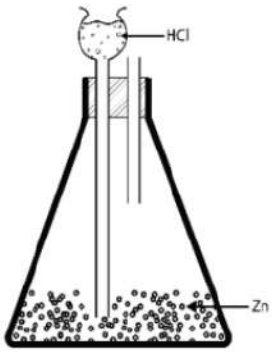
(i) Tissue culture

(ii) Budding

(iii) Layer method

(iv) Induce rooting from stem cuttings

31) What is the appropriate method to collect the gas produced during the reaction occurs in the given figure.



(i) Upward displacement of air

(ii) Downward displacement of air

(iii) Downward displacement of water

(iv) Downward displacement of either water or air

32) If a student takes 3 seconds to lift a bucket of water weighing 4kg to a height of 3m using a single lever. what is his rate of

(i) 9Js^{-1} (ii) 10Js^{-1} (iii) 20Js^{-1} (iv) 40Js^{-1}

33) What is the disease transmitted by sex-linked genes?

(i) Hemophilia (ii) Diabetes (iii) Albinism (iv) Anemea

34) Which one is not a solvent?

(i) Water

(ii) Ethanol

(iii) Mercery

(iv) Carbon disulphide

35) which factor affect the frequency of the sound produced by string instruments?

(i) Length of string
(ii) Tension of string
(iii) Cross section area of strings
(iv) All of the above

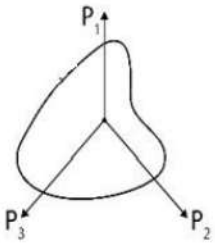
36) The outwardly visible characteristic of an organism is known as

(i) Homogenic characteristic
(ii) Phenotype
(iii) Genotype
(iv) Double ladybird cross

37) Select the non-polar solvents

(i) Carbon tetrachloride (ii) Water (iii) Methanol (iv) Ethanol

38) The figure shows an object in equilibrium under 3 forces. which of the following is a false statement?



(i) Three forces are on the same plane
(ii) The sum of P_1 and P_2 is equal to P_3 force
(iii) Lines of action of the three forces meet at a common point
(iv) The resultant of P_1 & P_2 is equal to the magnitude of P_3

39) Select the hormone that converts glycogen into glucose in the human body and the hormone that lower the level of calcium in blood respectively

(i) Insulin, Glucagon
(ii) Glucagon, thyroxin
(iii) Glucagon, calcitonin
(iv) Insulin, calcitonin

40) According to the reports of the National Dengue control unit, the number of dengue patients across the island on June 19th exceeded 26000. with 45 percent of the patients in the western province and fourteen dengue deaths reported, what is the most appropriate statement for the given statement.

(i) Dengue control activities carried out by the ministry of health have no impact on spreading the disease
(ii) Dengue disease has a uniform spread throughout the year
(iii) Not taking medicine given for dengue by people is caused for rapid spread.
(iv) The spread of disease increases during rainy season

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Gampaha Education Zone

දෙවන වාර ඇගයීම - 2025
Second term evaluation - 2025
இரண்டாம் தவணைப் பரீட்சை - 2025

ශ්‍රේණිය Grade	11	විෂයය Subject	Science II	කාලය Time	3 Hrs

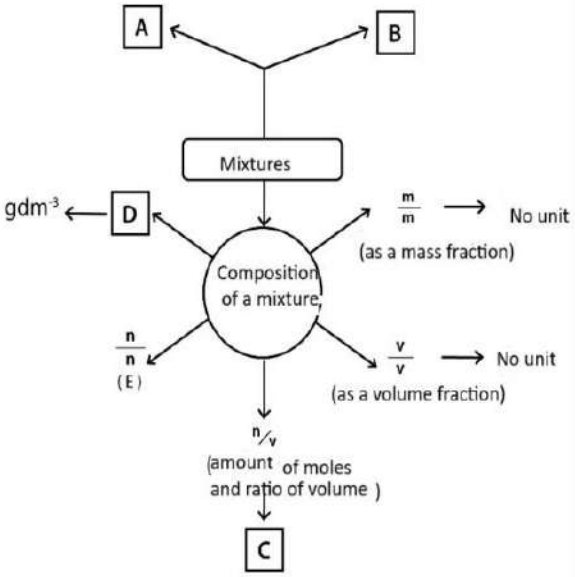
නම
பெயர்
Name

- Answer the four questions in part A, in the space provided.
- Of the five questions in part B answer three questions only.
- After answering, tie part A and the answer script of part B together and handover.

Part A -Structured Essay

1)

A) The following figure presents a summary chart prepared using mixtures.



i. Name A and B (2 Mark)

.....

.....

ii. Which one can be considered as a solution from above A and B (1 Mark)

.....

.....

iii. What is the name of the method used to find the composition of a mixture in E? (1 Mark)

.....

iv. Present the method D using relevant symbols, like other methods shown in the figure (Mark1)

.....

v. What is the international unit of measuring the amount of substance? (1 Mark)

.....

vi. What unit is commonly used in the method of expressing composition denoted by 'C' (1 Mark)

.....

vii. What is the mass of glucose required to prepare 100cm³ of a 1moldm⁻³ glucose solution? (C-12, H-1, O-16) (2 Mark)

.....

B) Glucose is one component of a bio molecule

i. What type of bio molecule does glucose belong to (1 Mark)

.....

ii. In an activity by a group of students to study the action of enzymes on starch, the relevant enzyme was added to the starch solution and every two minutes, a drop of it was placed on a white ceramic tile and iodine solution was added drop by drop.

a) What enzyme can be added here? (1 Mark)

.....

b) What color was obtained when iodine was added to the solution at the beginning of the activity? (1 Mark)

.....

c)

I. what was observed when iodine was added to a drop of mixture at the end of the activity? (1 Mark)

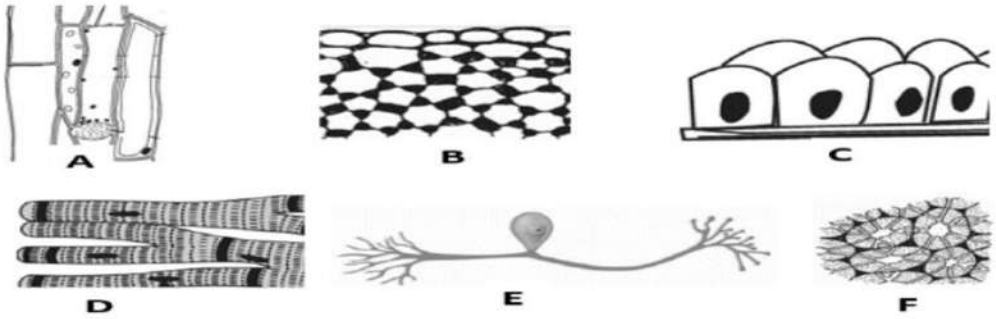
.....

II. What conclusion can be drawn from it (2 Mark)

.....

(15 marks)

2) A)



i. Observe the diagrams carefully and separate them as plant cells/tissues and animal cells/tissues. Use the given letter. (3 Mark)

.....

.....

ii. Which letter shows complex permanent tissues in plant tissues. (1 Mark)

.....

iii. Which animal tissue is responsible for absorption / perception of stimuli / secretary and filtration function? (1 Mark)

.....

iv. Which unit or cell is responsible for the 'reflex arc' in human body? (1 Mark)

.....

.....

v. The function of which tissue contributes to the circulation of nutrients and oxygen throughout the body? (1 Mark)

.....

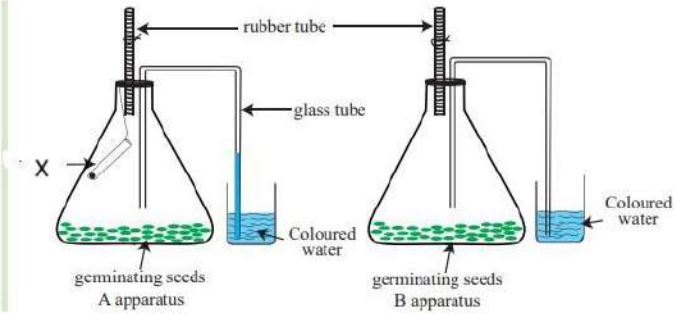
B)

i. Write two characteristics that can be identified, a matter as a living being? (2 Mark)

.....

.....

The following figure shows an activity that can be conducted to demonstrate germinating seeds do respiration.



ii. What is x? (1 Mark)

.....

iii. What is the purpose of adding x?

.....(1 Mark)

iv. What observations are made if the activity is done correctly? (2 Mark)

.....

v. What is the conclusion that can be drawn accordingly? (1 Mark)

.....

vi. State one assumption that made during the activity (1 Mark)

.....

3) A) Here are few elements that are located in the third period of periodic table consecutively.

..... (a)	..... (b)	Al	Si	..... (c)	..... (d)	Cl	Ar

i. Write down the relevant elements suitable for a, b, c, and d. (2 Mark)

.....

ii. Write down in standard form of Cl if it has 17 protons and 18 neutrons. (1 Mark)

.....

iii. What is the valency of Al? (1 Mark)

.....

iv. Construct chemical formula of the compound formed between Cl and the element that matches 'b'? (1 Mark)

.....

v. Name the two elements in solid state which produce strong basic and acidic oxides respectively (1 Mark)

.....

B) Sodium hydroxide, calcium hydroxide, sulphuric acid, acetic acid and glucose are given. Answer the following questions based on the given substances.

i. Explain what is an acid? (1 Mark)

.....

ii. Select a strong acid from the given list? (1 Mark)

.....

iii. Which chemical compound is used to identify CO_2 gas? (1 Mark)

.....

iv. Which solution is in the pH range 5-6? (1 Mark)

.....

v. Write a common name for each of the following compounds . (3 Mark)

a) Sodium hydroxide .....

b) Calcium hydroxide .....

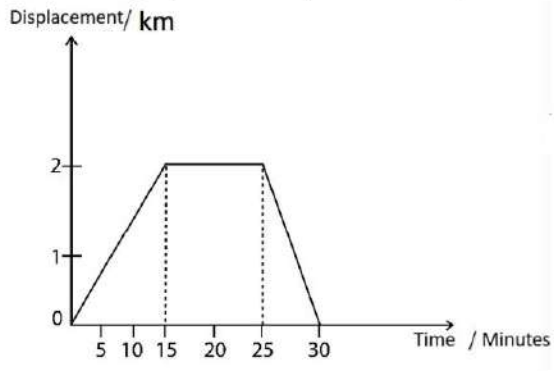
c) Hydrogen sulphate.....

vi. Select two suitable compounds from above list for acid-base neutralization and write the balanced chemical equation for the relevant reaction. (2 Mark)

.....

.....

4) A) The displacement-time graph for a bicycle travelling on a straight road is shown here.



i. Describe the motion of the bicycle? (1 Mark)

.....

.....

.....

ii. What was the displacement during the first 15 minutes? (1 Mark)

.....

iii. What is the rate of change of displacement in kilometers per hour during that 15-minute period? (1 Mark)

.....

.....

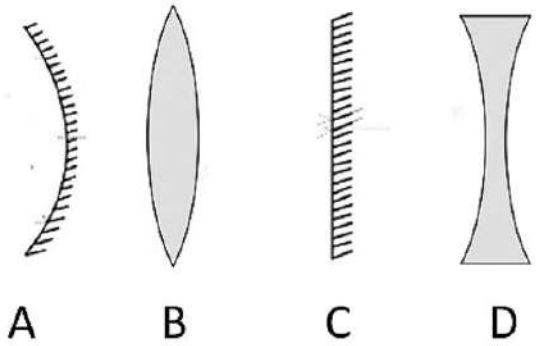
iv. Give one word for rate of change of displacement (1 Mark)

.....

v. What is the total displacement of the cyclist after 30 minutes? (1 Mark)

.....

C) Some geometric optics are given below.



i. Identify and write the names? (2 Mark)

A ..... B.....

C..... D.....

ii. In which device / devices give always a virtual image.? (2 Mark)

.....

iii. In which device /devices can converge a parallel beam of light? (2 Mark)

.....

iv. The ray diagram below shows an object placed in front of a concave mirror with a focal length of 10cm. Complete the ray diagram and write two characteristics of the image formed. (3 Mark)

.....

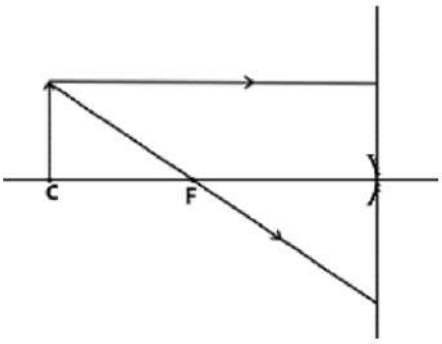
.....

.....

.....

.....

.....



Science II - grade 11

Part B – Essay

5) A) Reproduction of organisms is very important for the continuity of life.

i. Name the two main methods of reproduction found in plants. (2 Mark)

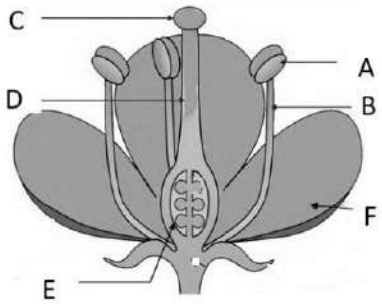
ii. Write one advantage of each method you mentioned above (2 Mark)

iii. The figure shows of an outline of a flower as the reproductive part of the plant.

a) Name A B C D E and F (3 Mark)

b) Write the function of A and F (2 Mark)

c) Which of the above parts can ultimately become a fruit? (1 Mark)



B) The activity shown below is related to Photosynthesis.

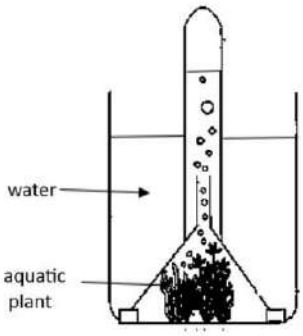
i. For what purpose was this set up created? (2 Mark)

ii. Write two observations that are made when the structure is exposed to sunlight? (2 Mark)

iii. What gas is collected inside the boiling tube? (2 Mark)

iv. Express the process of photosynthesis with a balanced chemical equation (2 Mark)

v. A student says that the survival of the living world depends on the above process. write two reasons why you agree with that statement. (2 Mark)

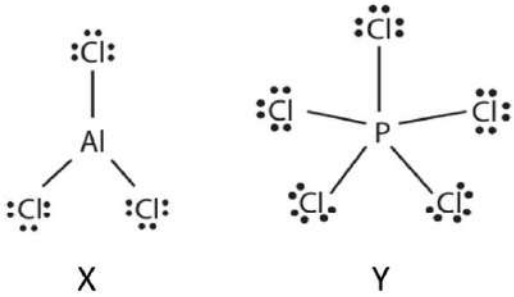


6) A)

i. What type of bond in between the atoms of the above two molecules. (1 Mark)

ii. How many electrons present in the valency shell of the Al atom? (1 Mark)

iii. What difference do you see between the central atoms of **X** and **Y** compounds in terms of the type of bond formed? (2 Mark)



B)

i. What is the name of the given structure? (1 Mark)

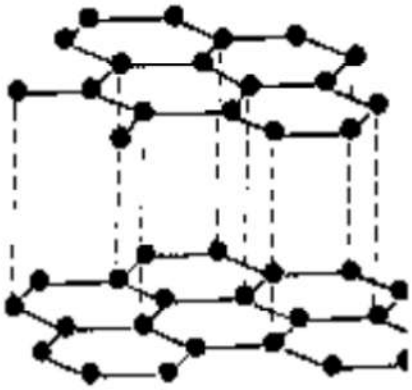
ii. How many other carbon atoms is bonded to each carbon atom? (1 Mark)

iii. Which specialty obtained due to the above formation of atoms.? (1 Mark)

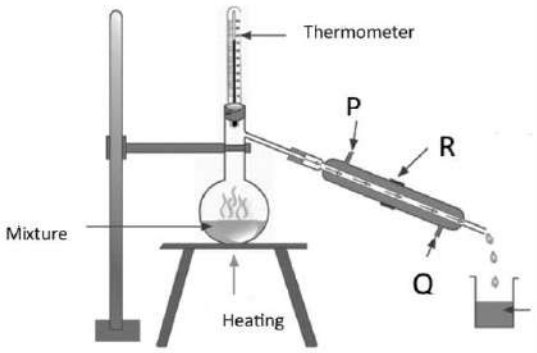
iv. Write a use of this structure (1 Mark)

v. There is a situation where the number of carbon atoms changes and creates a different structure than the previous one. what is it? - (1 Mark)

vi. What is the specialty of it? (1 Mark)



C) This Set up is used to a separate the components of a mixture



i. What is the separation method used in this set up? (1 Mark)

ii. What is the difference between the components of such a mixture? (2 Mark)

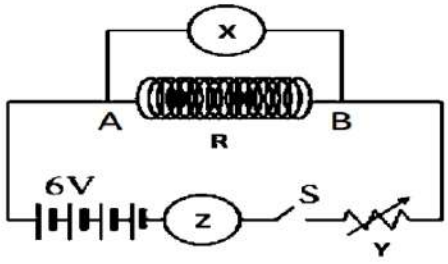
iii. State one occasion where this method is used? (2 Mark)

iv. In the above figure,
   a) Name the apparatus R? (1 Mark)
   b) Write down the exact places where water in and water out using the given letters respectively? (2 Mark)

v. What is the method of separating components that can be used to detect active chemical compounds in plants? (2 Mark)

vi. Write down the compounds that precipitate in the three tanks used in the extraction of salt from sea water respectively? (2 Mark)

7) A) The figure shows a circuit diagram of a test to find out the value of resistor A.

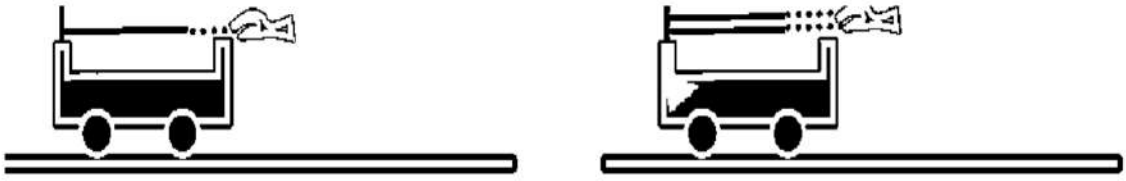


i. Name X and Y respectively? (3 Mark)

ii. Name the device Y and write the importance of it? (2 Mark)

iii. State weather direction of the current pass through the resistor R either A to B or B to A? (1 Mark)

B) Below is that a diagram of one of two activities that a group of students presented to verify one of Newton's laws.



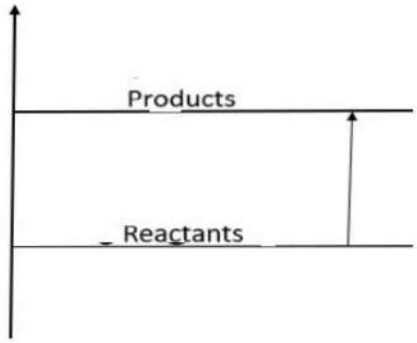
i. As shown in the figure, the activity was conducted by applying force by using one, two, three rubber bands respectively, keeping the distance of the rubber band pulled at constant.
   a) What is the observation? (1 Mark)
   b) What conclusion can be drawn accordingly? (1 Mark)
   c) Write the expression that can be drawn according to the conclusion? (Consider applied force - F, acceleration -a and the mass of the trolley is m.) (1 Mark)

ii. Answer the following questions related to the other activity that the student group might have carried out by taking three trolleys.
   a) What are the two main quantities considered to prove the law? (2 Mark)
   b) Write an appropriate expression for the relationship between those two quantities? (1 Mark)
   c) What is the constant factor here? (1 Mark)

iii. What is the Newton's Law that was confirmed using the above two activities (1 Mark)

iv. If the mass of the trolley is 500g and the force exerted is 1N, Calculate the acceleration of the trolley. (2 Mark)

C) The figure is an energy diagram showing the heat change associated with a certain chemical reaction.



i. Is the reaction being exothermic or endothermic (2 Mark)

ii. Below are two reactions that have been proposed as being relevant to this energy diagram.

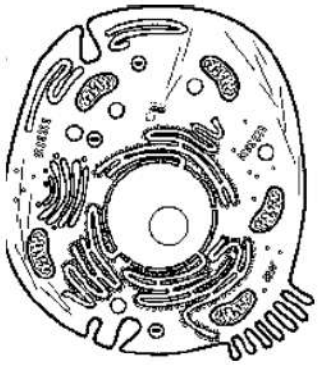
1) Mg react with dilute HCl
2) Decomposition of lime

a) Which reaction is related to the energy diagram? (Mark 4)

b) Write down balance chemical equation for the above reaction. (2 Mark)

8) A)

i. The figure shows a schematic diagram related to the electron microscopic structure of a living cell.



a) Is it a plant cell or animal cell? (1 Mark)

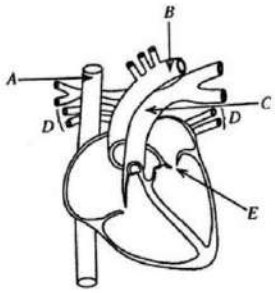
b) State the reason for your answer (1 Mark)

i. Write down two structures that are present in a "typical cell" but not in this figure. (3 Mark)

ii. What is cell growth? (1 Mark)

iii. Name two cell divisions? (2 Mark)

B) The figure shows a schematic diagram showing the internal structure of the human heart.



i. Name A, B, C, D (2 Mark)

ii. What is the man difference in the composition of the blood in B compared to the composition of the blood flowing through A? (1 Mark)

iii. How does the intrinsic 'Lub' sound created in the heart? (1 Mark)

iv. "Double circulation" occurs in the human heart Explain it briefly? (1 Mark)

C) At present, the use of electromagnetic waves is very high.

i. What are electromagnetic waves? (1 Mark)

ii. Mention two characteristics of electromagnetic waves? (2 Mark)

iii. Write the ascending order of frequency of the waves belonging to the electromagnetic spectrum? (2 Mark)

iv. A certain type of radiation with frequency below the red color of the visible light range is also emitted by heated objects. They are also called heat rays.

a) What is that type of rays? (1 Mark)

b) Write 2 uses of them (2 Mark)

9) A) Part of the activity series is given below.

i. Name two criteria that are used in the preparation of the activity series (2 Mark)

ii. State one importance of the activity series in day today life. (1 Mark)

iii. Write an observation that can be seen when Mg strip is added to a copper sulphate Solution (1 Mark)

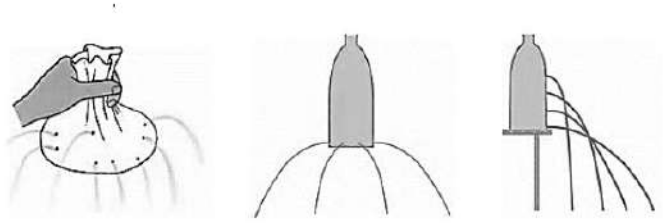
iv. Write down the balance chemical equation for the above reaction? (2 Mark)

v. To which type of chemical reaction it is belonged? (1 Mark)

vi. What is the name of the method used to separate metals from compounds which are in the top of the activity series (1 Mark)

K
Na
Ca
Mg
Al
Zn
Fe
Pb
Ag
Pt
Au

B)



X Y Z

i. What is pressure? (2 Mark)

ii. State the observations and conclusions of the given activities? (3 Mark)

Observation	Conclusion
X Y Z	

iii. The pressure exerted on the ground by a wooden box with an area of $4m^2$ is 300 pa. Calculate the force exerted on the ground by the box? (2 Mark)

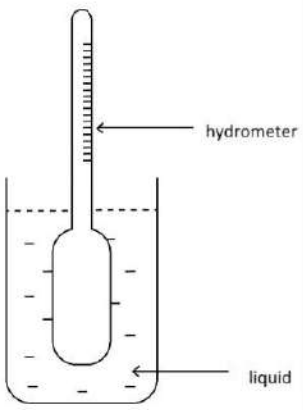
iv. The figure shows a situation where a hydrometer is immersed in a certain liquid and is in equilibrium.

a) What principle is used in the hydrometer? (1 Mark)

b) Write an expression for the force acting on the hydrometer when it is immersed vertically? (1 Mark)

c) What can be said about the sinking level of the hydrometer, if it is immersed in a liquid with high density? (1 Mark)

d) Write down the law that was mentioned in iv (a)? (2 Mark)



ගම්පහ අධ්‍යාපන කලාපය
Gampaha Education Zone

දෙවන වාර ඇගයීම - 2025
Second Term Evaluation - 2025

ශ්‍රේණිය Grade 11	විෂයය Subject විද්‍යාව - පිළිතුරු පත්‍රය	කාලය Time පැය 03

I කොටස

1	2		11	1		21	3		31	4
2	2		12	4		22	4		32	4
3	2		13	3		23	3		33	1
4	1		14	1		24	1		34	2
5	4		15	2		25	2		35	4
6	1		16	4		26	2		36	2
7	2		17	2		27	3		37	1
8	2		18	1		28	1		38	2
9	3		19	3		29	3		39	3
10	3		20	2		30	1		40	4

II කොටස

01)A

i. A - සමජාතීය /විෂම ජාතීය B - විෂම ජාතීය / සමජාතීය (ල . 02)
ii. A හෝ B (i) පිළිතුර අනුව නිවැරදි එකකට (සමජාතීය) (ල . 01)
iii. මවුල භාගය ලෙස (ල . 01)
iv. m / V (ල . 01)
v. මවුලය (ල . 01)
vi. ඝන ඩෙසිමීටරයට මවුල / mol dm^{-3} (ල . 01)
vii. ග්ලූකෝස් මවුලික ස්කන්ධය = 180 gmol-1
1 mol වීමට 1000 cm^3 ක් තුළ ග්ලූ. = 180 g
1 mol වීමට 100 cm^3 ක් තුළ ග්ලූ. = $\frac{180 \times 100}{1000}$ g නියු
= 18 g (ල . 02)

B

i. කාබෝහයිඩ්‍රේට (ල . 01)
ii. a. ඇමයිලේස් / මුං බීජ නිස්සාරකය / බේට ද්‍රාවණය (ල . 01)
b. නිල් /දම් (කළු පාටට හුරු) (ල . 01)
c. (ලා) කහ / (ලා දුඹුරු) (ල . 01)
d. පිෂ්ඨය ඇමයිලේස් බවට පත් වී ඇති බව (ල . 02)

(මුළු ලකුණු 15 යි.)

02) A

i. ශාක - A , B , F සත්ත්ව - C , D , E (ල . 03)

ii. A / ප්ලොයම පටකය (ල . 01)
iii. C / අපිච්ඡද පටකය (ල . 01)
iv. E / නියුරෝන සෛලය (ල . 01)
v. D / හෘත් පේෂි පටකය (ල . 01)

B

i. සෛලීය සංවිධානය / පෝෂණය /ශ්වසනය /බහිස්ස්‍රාවය /චලනය/ ප්‍රජනනය / වර්ධනය හා විකසනය (ල . 02)
ii. KOH (ල . 01)
iii. ප්ලාස්කුව තුළ කාබන්ඩයොක්සයිඩ් අවශෝෂණය (ල . 01)
iv. P ඇටවුමේ විදුරු නලය දිගේ ජල මට්ටම ඉහළ යාම. Q ඇටවුමේ වෙනසක් නැත. (ල . 02)
v. ප්‍රරෝහණයවන බීජ ශ්වසනයේදී ඔක්සිජන් අවශෝෂණය කරනබව (ල . 01)
vi. ◌ං ශ්වසනයේ දී පිටවන CO_2 පරිමාව හා අවශෝෂණයවන O_2 පරිමාව සමාන බව
◌ං පරීක්ෂණය අවසානයේදී ප්ලාස්කුව තුළ CO_2 පරිමාව නොසැළකිය හැකි තරම් තුඩාබව(ල . 01)
(මුළු ලකුණු 15 යි.)

03) A

i. Na , Mg , P , S (පිළිවෙලින්) (ල . 02)
ii. $^{35}_{17}Cl$ (ල . 01)
iii. 3 (ල . 01)
iv. $MgCl_2$ (ල . 01)
v. භාස්මික - Na ආම්ලික -S (ල . 01)

B

i. ජලීය මාධ්‍යයේදී H^+ මුදාහරින රසායනික සංයෝග (ල . 01)
ii. සල්ෆියුරික් අම්ලය (ල . 01)
iii. කැල්සියම් හයිඩ්‍රොක්සයිඩ් (ල . 01)
iv. ඇසිටික් අම්ලය (ල . 01)
v. a. කෝස්ටික් සෝඩා b. හුණු දියර c. බැටරි අම්ලය (ල . 03)
vi. $H_2SO_4 + 2\ NaOH \longrightarrow Na_2SO_4 + 2\ H_2O$ (ල . 02)
(මුළු ලකුණු 15 යි.)

04) A

i. නිශ්චලතාවයෙන් ගමන් අරඹා මිනිත්තු 15 කදී 2 km විස්ථාපනයක් ලබාගෙන ඊලඟ මිනිත්තු 10 නතර වී සිට අවසාන මිනිත්තු 5 තුළ විස්ථාපනය අඩුකර ගනිමින් ආරම්භක ස්ථානයට පැමිණ ඇත. (ල . 01)
ii. 2 km (ල . 01)
iii. පැය ¼ ට (මිනිත්තු 15) - 2 km
පැය 1 ට - 2 / ¼ x 1 = 2 x 4 = 8 kmh-1 (ල . 02)
iv. ප්‍රවේගය (ල . 01)
v. 0 / ශූන්‍ය යි. (ල . 01)

B

i. A - අවතල දර්පණය B - උත්තල කාචය C - තල දර්පණය D - අවතල කාචය (ල . 02)
ii. C හා D (ල . 02 හෝ 00)
iii. A හා B (ල . 02 හෝ 00)
iv. නිවැරදි කිරණ සටහනට (ල . 02)
ප්‍රතිබිම්බය යටිකුරුයි / සමානයි /තාත්විකයි / C මත පිහිටයි. (ල . 01)
(මුළු ලකුණු 15 යි.)

05) A

i. අලිංගික ප්‍රජනනය හා ලිංගික ප්‍රජනනය (ල . 02)
ii. ගැලපෙන පිළිතුරු දෙකකට (ල . 02)
iii. a. A - පරාග ධානිය B - සූත්‍රිකාව C - කලංකය D - කීලය
E - ඩිම්බ කෝෂය F - දළ/මුකුටය (ල . 03)

b. A - පරාග නිපදවීම / දරා සිටීම F - ළපටි කාලයේ පුෂ්පයේ කොටස් ආරක්ෂා (ල . 02)
c. ඩිම්බ කෝෂය (ල . 01)

B

i. ප්‍රභාසංශ්ලේෂණයේදී ඔක්සිජන් පිටවන බව (ල . 02)
ii. වායු බුබුලු පිටවීම / කැකෑරුම් නලයේ ජල මට්ටම අඩුවීම නලයේ ඉහළ කෙළවර වායුවක් එකතු වීම (ල . 02)
iii. ඔක්සිජන් (ල . 01)
iv. නලය තුළට පුළිඟු කීරක් ඇතුල් කළ විට දීප්තිමත්ව දැල්වේ. (ල . 01)
v. නිවැරදි සමීකරණයට (ල . 02)
vi. ගැලපෙන නිවැරදි පිළිතුරු දෙකකට (ල . 02)

(මුළු ලකුණු 20 යි.)

06) A

i. සහ සංයුජ බන්ධන (ල . 01)
ii. 6 (ල . 01)
iii. මධ්‍ය පරමාණුවල ඉලෙක්ට්‍රෝන අෂ්ඨකය අසම්පූර්ණ වීම (6 හා 10) පැහැදිලි කි.(ල . 02)

B

i. මිනිරන් පරමාණුක දැලිස (ල . 01)
ii. 3 ක් (ල . 01)
iii. තලීය ස්ථර ස්වරූපයක් ගැනීම වැනි (ල . 01)
iv. ලිහිස්සි ද්‍රව්‍යයක් ලෙස (ල . 01)
v. දියමන්තිවල ව්‍යුහය (ල . 01)
vi. ස්ඵටිකරූපී ත්‍රිමාණ දැලිසක් / දැඩි බව (ල . 01)

C

i. සරල ආසවනය (ල . 01)
ii. එක් සංඝටකයක් වාෂ්පශීලී සංඝටකයක්වන අතර අනෙක් සංඝටකය වාෂ්පශීලී නොවන සංඝටකයකි. (ල . 02)
iii. ළිං ජලයෙන් ආස්‍රැත ජලය ලබා ගැනීම / මුහුදු ජලයෙන් පානීය ජලය ලබා ගැනීම (ල . 01)
iv. a . R - ලීබිග් කන්ඩෙන්සරය (ල . 01)
b . ඇතුළු කිරීම - Q පිට කිරීම - P (ල . 02)
v. වර්ණලේඛ ශිල්ප ක්‍රමය (ල . 01)
vi. $CaCO_3$, $CaSO_4$, NaCl (ල . 02)

(මුළු ලකුණු 20 යි.)

07) A

i. X - වෝල්ට් මීටරය , Z - ඇමීටරය (ල . 02)
ii. ධාරා නියාමකය / විචල්‍ය ප්‍රතිරෝධකය , පරිපථය තුළින් ගලන ධාරාව පාලනය (ල . 02)
iii. A සිට B (ල . 01)

B

i. a. රබර් පටි ගණන වැඩිකර බලය වැඩිකරන විට ට්‍රොලියේ ත්වරණය (ප්‍රවේගය වැඩිවීම) වැඩිවේ. (ල . 01)
b. යොදන බලය ත්වරණයට අනුලෝමව සමානුපාතික වේ. / වැඩිවේ. (ල . 01)
c. $a \propto F$ (ල . 01)
ii. a. ස්කන්ධය හා ත්වරණය (ල . 02)
b. $a \propto 1/m$ (ල . 01)
c. යොදන බලය (ල . 01)
iii. දෙවන නිව්ටන් නියමය (ල . 01)
iv. $F = m\ a$, $a = F / m$, $= 1\ N / 0.5\ kg = 2\ ms^{-2}$ (ල . 02)

C

i. තාප අවශෝෂක (ල . 02)
ii. a. භූණුගල් වියෝජන ප්‍රතික්‍රියාව (ල . 01)

b. $CaCO_3 \xrightarrow{\text{රත් කිරීම}} CaO + CO_2$ (ල . 02)

(මුළු ලකුණු 20 යි.)

08) A)

i. a. සත්ත්ව සෛලය (ල . 01)
b. සෛල බිත්තියක් නොතිබීම / හැඩය අනුව (ල . 01)
ii. සෛල බිත්තිය / හරිත ලවය / විශාල රික්තකය (ල . 02)
iii. සෛලයක ප්‍රමාණය හෝ වියළි බර (ස්කන්ධය) අප්‍රතිවර්ත්‍ය ලෙස වැඩිවීම (ල . 01)
iv. අනූනන විභාජනය / ඌනනණ විභාජනය (ල . 02)

B

i. A - උත්තර මහා ශිරාව B - සංස්ථානික මහා ධමනිය
C - පුප්ඵුශීය ධමනිය D -පුප්ඵුශීය ශිරා (ල . 02)
ii. B තුළ රුධිරයේ ඔක්සිජන් සාන්ද්‍රණය වැඩියි. CO_2 සාන්ද්‍රණය අඩුයි. (ල . 01)
iii. ද්වි තුණ්ඩ හා ත්‍රී තුණ්ඩ කපාට වැසීමේදී (ල . 01)
iv. දේහය හරහා වරක් රුධිරය සංසරණයේදී හෘදය තුළින් දෙවරක් ගමන් කිරීම (ල . 01)

C

i. එකිනෙකට ලම්බකව දෝලනයවන විද්‍යුත් ක්ෂේත්‍රයක් හා චුම්බක ක්ෂේත්‍රයක් අතරින් එම ක්ෂේත්‍ර දෙකට ලම්බකව ප්‍රචාරණය වන තරංග (ල . 01)
ii. බාහිර විද්‍යුත් හා චුම්බක ක්ෂේත්‍ර මඟින් එම තරංගවලට බලපෑමක් නැත. / සම්ප්‍රේෂණය සඳහා මාධ්‍යයක් අවශ්‍ය නොවේ. / රික්තයේදී $3 \times 10^8 ms^{-1}$ වේගයෙන් ගමන් කරයි. (ල . 02)
iii. ගැමා , X කිරණ , පාරජම්බුල , දෘශ්‍ය ආලෝකය , අධෝරක්ත , ක්ෂුද්‍ර තරංග , ගුවන් විදුලි තරංග (ල . 02)
iv. a. අධෝරක්ත කිරණ (ල . 01)
b. දුරස්ථ පාලකවල , භෞත චිකිත්සක ප්‍රතිකාර සඳහා , අධෝරක්ත දෙනෙති හා කැමරාවල (ල . 02)

(මුළු ලකුණු 20 යි.)

09) A

i. ලෝහ වාතය සමග / ජලය සමග / අම්ල සමග / වෙනත් ලෝහවල ලවණ ද්‍රාවණ සමඟ දක්වන ප්‍රතික්‍රියාශීලිතාවය අනුව (ල . 02)
ii. ගැලපෙන පිළිතුරකට (ල . 01)
iii. මැග්නීසියම් කැබැල්ල ක්ෂය වීම / කොපර් සල්ෆේට් ද්‍රාවණයේ වර්ණය ක්‍රමයෙන් අඩුවීම / තලය පතුලේ රතු දුඹුරු පැහැති ද්‍රව්‍යයක් තැන්පත්වීම (ල . 01)
iv. $CuSO4 + Mg \longrightarrow MgSO4 + Cu$ (ල . 02)
v. ඒක විස්ථාපන ප්‍රතික්‍රියා (ල . 01)
vi. විලීන සංයෝග විද්‍යුත් විච්ඡේදනය මඟින් (ල . 01)

B

i. ඒකක වර්ගඵලයක් මත ක්‍රියාකරන අභිලම්බ තෙරපුම් බලය (ල . 02)
ii. X - සෑම දිශාවකටම සිදුරුවලින් ජලය විදීම - ද්‍රව පීඩනය සෑම දිශාවකටම ක්‍රියා කරයි
Y - ජලය එකම තිරස් දුරකට ගමන්කරන බව - එකම මට්ටමේ පීඩන සමාන බව
Z - ක්‍රමයෙන් ඉහළ සිට පහළ සිදුරුවල ජලය - ද්‍රවයක ගැඹුර වැඩිවත්ම පීඩනය වැඩිවේ. විදින වේගය වැඩිවේ. (ල . 03)
iii. $P = F / A$, $F = P \times A = 300 \times 4 = 1200$ N (ල . 02)
iv. a. ආකිමිඩිස් මූලධර්මය (ල . 01)
b. ද්‍රවමානයේ බර = ද්‍රවය මඟින් ඇතිකරන උඩුකුරු තෙරපුම (ල . 01)
c. ද්‍රවමානය ගිලෙන ගැඹුර අඩුවේ. (ල . 01)
v. වස්තුවක් තරලයක් තුළ පූර්ණවශයෙන් හෝ අර්ධ වශයෙන් හෝ ගිලී ඇති විට එය මත ක්‍රියාකරන උඩුකුරු තෙරපුම වස්තුව මඟින් විස්ථාපිත තරලයේ බරට සමාන වේ. (ල . 02)

(මුළු ලකුණු 20 යි.)