බස්තාහිර පළාත් අධනාපන දෙ තාහිර පළාත් අධාාපත Western Province Education බස්තාහිර පළාත් අධාාපන දෙපාර්තමේන්තුව Province Education We மேல் மாகாணக் கல்வித் தி බස්නාහිර පළාත් අධාාපන දෙ ணக் கல்வித் திணைக் තාහිර පළාත් අධාාපන மேல் மாகாணக் கல்வித் திணைக்களம் Western Province Education Province Education We **Department of Education - Western Province** மேல் மாகாணக் கல்வித் தில ாக் கல்வித் திணைக்க මස්තාහිර පළාත් අධතාපත නාහිර පළාත් අධනාපන වර්ෂ අවසාන ඇගයීම **Year End Evaluation** ලේණිය පතුය විෂයය විදහාව 01 வினாத்தாள் மணித்தியாலம் தரம் பாடம் Science Paper Grade Hours Subject Name: Answer all the questions. What is the simplest amino acid? Keratin Albumin 3. I. Glycine Hemoglobin Not a biomolecule, 2. 3. Nucleic acid Oxygen 2. 1. Protein Water The appearance of red and purple spots on the leaves of a certain plant is a deficiency of which element? 3. Sulphur 2. **Phosphorous** 1. Nitrogen Select the answer with only the vector quantities. 4. 1. Displacement, Distance Pressure, Velocity Acceleration, Speed 3. Velocity, Weight Below given is a diagram related to the motion of a child who started traveling from a place A and traveled through B to C. The distance and displacement of the child is, 17m, 13m to Northwest 13m, 17 m to Northwest 2. 17m, 13m to Southeast 13m, 17m to Southeast What force must be applied to an object with the mass of 10 kg to achieve an acceleration of 3 ms<sup>-2</sup>? 6. 13 N 30 N 7 N The electron configuration of a certain element is 2,8,5. The position of the element in the periodic table is? Period 3, Group IV 1. Period 5, Group III Period 5, Group II 3. Period 3, Group III A chemical property of metals is, Oxides are alkaline 1. Malleable 2. 3. Good thermal and electrical conductor 4. High density The carbonate of an element M is M<sub>2</sub>(CO<sub>3</sub>)<sub>3</sub>. What is the chemical formula of the chloride of the same element? MC1 M<sub>2</sub>Cl 1. MCl<sub>3</sub> 2. MCl<sub>2</sub> Department of Education - Western Province Science - Grade 10 1

10.	What is the cell organelle that cannot be seen with the	ne high power of the microscope?  3. Nucleus	4. Vacuole
	1. Mitochondrion 2. Cell wall	THEOLOGIC CONTRACTOR C	
11	An instance in which mitosis occurs.		
	In the growth of multicellular organisms.	2. In tissues culture.	
Tu q	3. When healing wounds.	4. Formation of gametes in	humans.
12.	Which of the following contains the same number of	f atoms, as in 2 moles of Sulphur?	
	(Consider $C = 12$ , $O = 16$ , $Na = 23$ , $N = 14$ )		
	1. 12g of C (Carbon)	2. 32g of O (Oxygen)	sacress of a Welling
	3. 23g of Na (Sodium)	4. 56g of N (Nitrogen)	
13.	Which of the following is an application of the elem-	ent Si (Silicon)?	
e en mi	1. To vulcanize rubber	2. In welding metals	
	3. IN producing skin care products	4. IN making solar panels	
14.	The type of cell which is not seen in plants is,	,	
	1. Pollen cells 2. Muscle cells	3. Xylem cells 4. R	loot hair cells
15.	Choose the true statement about viruses.		
13	1. In these, cell organelles like nucleus and mitoche	ondria can be seen.	
	2. Metabolic processes occur within the virus.		
	3. Viruses contain DNA and RNA.		
	4. All viruses are pathogenic.		
16.	The following figure shows how forces act on an obj	ect. The force denoted by X is,	
	1. 15 N + 28	2. 28 N 15N	28
	3. 28 N – 15 N	4. 15 N X N	
	Questions 17 and 18 are based on the following info	ormation.	
	하는 사이트를 가면서 경험을 하시는 때 있다.		3
	The following figure shows the nature of a bond between	een two atoms A and B ( 🖸 )	(1) B
			1
17.	The Lewis structure of this molecule is,	• • • B	
	1 A – B 2. • A•	3. A.	4. A
	B P B	B B	B B
18.	What is the correct formula of the structure given about	ove?	
	1. H <sub>2</sub> O 2. CO <sub>2</sub>	3. H <sub>2</sub> S	4. CaCl <sub>2</sub>
19.	[2] [2] [2] [2] [2] [2] [2] [2] [2] [2]	ment. $\leftarrow$ 5 m $\rightarrow$	- Xm
	A. The mass of object P in the figure is 8 kg.	<b>▼</b>	Q-100N
	B. If the rod is balanced, the X distance is 5 m.	P- 80N	
	C. When the moment on either side is equal, the rod	1s balanced.	of an Arrest
	Which of the above statements are true?		
	1. A and B 2. A and C	3. B and C 4.	All A, B, C
	Compared the property of the compared to the c		

20.	Which of the following is not a requirement for an object	ct to be	in equilibrium under th	ree parallel forces?					
	1. The three forces must be coplanar.								
5	2. One force must act in opposite to the other two force	es.							
	그는 아이들에게 하면 아이들이 아이들의 아이들이 아이들이 아는 아이들이 아는 아이들이 아이들이 아이들이 아이들								
	4. A parcel placed on a table is in equilibrium under the	ree for	rces.	egman (stables 1974) Nastrum Olekson					
21.	An object placed on a horizontal plane is pulled to the So	outh by	the force of 20N. The for	rce that must be applie					
	to bring the object to rest is,								
	1. 20 N to South	2.	10 N to South						
	3. 20 N to North	4.	Any force in any direct	ction					
22.	What is the instance when an unbalanced force does not	t act?	nel sentre la ricidad (d. 1916). L'Avenue verbier di 1916						
	1. When a vehicle stops by using brakes.	2.	When an object is at r	est on the ground.					
	3. When an object moves with an increasing velocity.	4.	When an object move	s up a hill.					
23.	The correct representation of the scientific name of the c	coconut	plant is,	SQL					
	1. COCOS NUCIFERA	2.	Cocos Nucifera	1.0 A					
	3. Cocos nucifera	4.	Cocos nucifera						
24.	Which of the following organism is not an example for a	a protis	t?						
 24.	1. Ulva 2. Paramecium	3.	Penicillium	4. Amoeba					
25	Consider the following statements and reasons.								
25.	Statement - Plant bodies that do not produce seeds a	re calle	d thallus.						
	Reason - There are plants that have no tissue differ	rentiati	ion such as stems, roots	or leaves.					
	Select the most correct answer.								
	1. Both the statement and reason are true.								
	2. The statement is true and the reason is false.								
	3. Both the statement and the reason are false.	Comp. Sale.							
	4. The statement is true and the reason explains the stat	ement.	en e						
•	Questions 26 and 27 are based on the animals mention	ned bel	ow.	, isomer i i i i i i i i i i i i i i i i i i i					
	Hydra	+ Si	nail						
26.	Animals that belong to the same phylum are,								
	1. Squid, snail	2.	Earthworm, Snail						
	3. Hydra, Squid	4.	Hydra, Earthworm						
27.	The animal whose body is divided into segments external	ly and i	nternally, is,						
	1. Earthworm 2. Hydra	3.	Snail	4. Squid					
28.	Select a thing that is <b>not</b> exchanged between mother and f	etus thi	rough the umbilical cord	AUCES AND A					
20.	1. Oxygen 2. Nutrients	3.	Blood	4. Pathogens					
29.	When an egg is produced, the various structures that ca flowchart.	n be so	een in an ovum are sho	wn in the following					
	Primary follicle → Graafian follicle → Corpus lute	um →	Corpus albicans						
Dene	ertment of Education – Western Province Science – Gi	rade 10		3					
cpa	Science - Or								

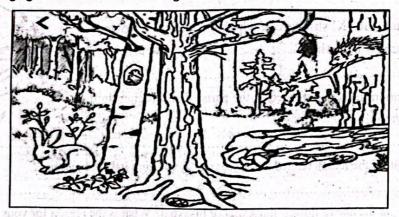
133	An egg is released from the ovary in which of the abo		
	1. Primary follicle	2.	Graafian follicle and south of the land
	3. Corpus luteum	10.4.1	Corpus albicans view sold sull
30.	Sexually transmitted diseases, which are transmitted	by bacteria	and viruses respectively, are,
50.	1. Gonorrhea, Herpes	2.	
1	3. Herpes, AIDS	4.	Herpes, Gonorrhea
		a bulung di	Strait and strain reference to the contract of
31.	An instance in which atmospheric pressure is not use	ed,	of the officer of least to got in
	<ol> <li>When drinking a drink using a straw.</li> </ol>		20 Ping Strute
	2. In the (fluid) brake system of vehicles.		
	3. In removing water from a tank by siphon method	l.	
	4. In the action of the rubber sucker.	a porta len	of the state of the property of the state of
	व्यक्ति प्रदेश हैं विकास करते हैं है ।	V-1-151	sia kapin ko siloni opiidosi energy, kir ir k
32.	마른 마른 사람들은 가장이 가득하는 것 같아. 그렇게 하는 것이 되었다면 하는 것이 없는 것이 없는 것이 없다면 하는 것이 없다면 하는데 없다면 하는데 없다면 하는데 없다면 하는데 없다면 없다면 다른데 없다면 하는데 없다면 없다면 하는데 없		
	acceleration is 10 ms <sup>-2</sup> , find the atmospheric pressure	in Pascals	
	1. 76/100 × 13600 × 10	2.	13600/76 × 10
	$3.76 \times 100 \times 13600 \times 10$	4.	76 × 13600 × 10
	LIBRAND		A CHANGE TO SEE THE SECOND TO SECOND
33.	The values of x and y to balance this reaction are,	maty's de sa	24. Which of the following commission
	$xAl + 6HCl \rightarrow 2AlCl_3 + yH_2$	inggan	1.1.17.ca
	1.3,2 2. 6,2	3.	2, 3 4. 3, 3
34.	Which of the following is a chemical decomposition	reaction?	Statement Paul Ponce har do c
34.	1. $2Mg + O_2 \rightarrow 2MgO$	effection:	CaCO₃ → CaO + CO₂
	$3. Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$	4.	$BaCl_2 + Na_2SO_4 \rightarrow BaSO_4 + 2NaCl$
	5. ZII + Cuso4 - Ziiso4 i Cu		Baci, 1,142,504
35.	A certain object weight 5 kg. When it moves at a spe	ed of 6 ms	, the kinetic energy is,
	1. 15 J 2. 30 J	3.	48 J 4. 90 J
		a tinimali a	eger oblam somelmometeritorito
36.	The catalyst used in the production of nitric acid from	n oxidation	of ammonia is,
	1. Porous Iron	2.	Nickel Nickel Stands and realist to
	3. Platinum	4.	Vanadium pentoxide
		uotor?	
37.	Which factor does not affect the resistance of a cond	2.	Length of the conductor
	1. Density of the conductive substance	4.	Cross sectional area of the conductor
	3. Type of substance the conductor made of		Taulio ann a tha
38.	Four quantities related to electricity and their unit of	measureme	ent is given below. Which of the following is
	not matching with the given quantities?	THINL COLUMN	Tati Deel Sin al Couca pied a manage as particles
1001	1. Potential difference - Volt (V)	2.	Electro motive force –Watt (W)
	3. Resistance – Ohm (Ω)	4. E	lectric current – Ampere (A)
	The transfer of the second of		So the season of
39.	An inherited characteristic that is not seen rarely, is,		
	1. Syndactyly	2.	Albinism
	3. Polydactyly	4.	Ability to fold the tongue
40.	A disease most likely to cause due to mosquito bites of	during the	H. T. 마스트 (1987년 - 1987년 ) 전 1987년 (1987년 - 1987년 ) 전 1987년 (1987년 ) H.
40.	1. Malaria 2. Elephantiasis	3.	Dengu 4. Encephalitis
	2. Dieplaniasis		

බස්නාහිර පළාත් අධනාපන දෙ බස්නාහිර පළාත් අධාාපන දෙපාර්තමේන්තුව Western Province Education Province Education We ணக் கல்வித் திணைக்க மேல் மாகாணக் கல்வித் தில மேல் மாகாணக் கல்வித் திணைக்களம் බස්නාහිර පළාත් අධනාපන දෙ නාහිර පළාත් අධාාපන Western Province Education Province Education We Department of Education - Western Province மேல் மாகாணக் கல்வித் தி ணக் கல்வித் திணைக்க නාහිර පළාත් අධාාපන ( බස්නාහිර පළාත් අධාාපන වර්ෂ අවසාන ඇගයීම **ஆண்டு இறுதி மதிப்பீடு — 2022 (2023** මාර්තු ) Year End Evaluation ලේණිය විෂයය පතුය පැය විදහාව 03 வினாத்தாள் மணித்தியாலம் தரம் பாடம் 10 Science Grade Subject Paper Hours Name :

- Write answers in clear handwriting.
- Answer all the four questions in that section in the space provided.
- Answer any three questions of your choice from Part B.
- Provide the answers and finally submit the answer sheets of part A and part B together.

#### Part A - Structured essay

01) A) Following figure shows some of the organisms that live in a forest environment.



1.	Which element is most abundant in the bodies of living things?	(m. 01)
ii.	Name two vertebrates live in the above environment  12.	(m. 01)
iii	Plants living here produce food through photosynthesis.  (a) Mention two characteristics shown by plants only.	(m. 02)
	1	(m. 01)
iv.	Write two groups of micro-organisms that help in the decomposition process of those the organisms found in this environment die.	bodies, after

	B)	i.	What type of biomolecule is formed by combining the elements Hy Nitrogen, and possibly Sulfur?	drogen, Oxygen, (m. 01)
		ii.	What is the building block of above-mentioned biomolecules?	(m. 01)
		iii.	in the living matter. Name two materials that could be used for the activity.	(m. 01)
		iv.		(m. 02)
		v.	1	(m. 01)
		vi.	하고 [112] 아이트 아이트 아이트 아이트 아이트 아이트 아이트 아이트를 보고 있다면 하는데 아이트를 보고 있다.	(m. 01)
	C)		Vitamins are needed to maintain the vital functions of organisms.	
		i.	Write down the vitamin that causes the following deficiency symptoms.  (a) Delays blood clotting	Telephone Control of the Control
02.	(A)		the flower is the organ for sexual reproduction in a flowering plant. Given here is a disposer.	agram of a typical
		i.	What is th 'X' structure in which the parts of a flower are arranged in a whorl?  (m. 01)  B A	C E
		ii.	Mention the letters related to the parts of androecium in this diagram. (m. 01)	F x
		iii.	Mention the letters related to the parts of gynoecium in this diagram.	(m. 02)
			iv. Is the above flower unisexual or bisexual? What is the reason for your answer	
		<b>v.</b>	Write two adaptations present in 'C' to prevent self-pollination.  1	(m. 02)
		vi.	Name two agents of pollination aided in cross pollination.  1	(m. 01)
B)			n is a unisexual animal. Thus, the male and female reproductive systems are located in anisms. Below is a diagram of the female reproductive system.  Name its parts.  A	B C
			Science - Grade 10	-D

	(a) Pituitary gland.	(m.	01)
	1	김 김과 (항원) 20일이 있는 경기가 가지 않는 사람들이 되었다. 이 사람이 되는 것이 되었다고 있다. 아니다.	
	(b) Structure 'A'	: 이용한 :: 시 ::	1. 01)
		2	
iii.	The changes occurring in 'C' du	ring the menstrual cycle can be divided into three main phases. Cor	mplete
	the following table about the pha	아이 가가가요 이 아이 아이를 하면 하는데 가장 하면서 되는데 얼굴이 다른데 하는데 하는데 하는데 이 얼굴이 되는데 하시다 () 나는데 하는데 하는데 하시다 () 나는데 하시다.	
	Phase	Change that occurs	
	Menstrual phase	(a)	
	(b)	Degraded wall starts to re-build	
	Secretory phase	(c)	
À		as of many signs with an and magnesium poveder into two test	tubes
	그런 그래 없는 다른 그리고 하다가 얼마나 그렇게 하는 그 경기를 하는 것 같아요?	es of magnesium ribbon and magnesium powder into two test	
		the hydrochloric acid to each of those tubes. The data obtain	cu by
		ed over time were plotted as shown in the graph given below.	
1.	What reactants were in the tube i	Volume	
		of the emitted	
ii.	Which factor affecting the rat	e of the chemical reaction was gas	
	tested by the experiment carrie	ed out by the students? (m. 01) (cm³)	
iii.	State the physical forms of ma	agnesium in the tubes representing	
	graphs A and B.	(m. 01) 0 10 15	Time (s
	A I	<b>3-</b>	•
iv.	Write the balanced chemical ed	quation for the chemical reaction taking place in the test-tubes.	m. 02)
	How to identify the gas release	ed during the above-mentioned reaction, in the laboratory? (m. t	221
v.			,2,
v.			
v.			
		A Company of the Comp	
v. vi.	Apart from the factor mentioned	above (ii), name two other factors that affect the rate of chemical rea	action.
vi.	Apart from the factor mentioned 1	above (ii), name two other factors that affect the rate of chemical readers.	n. 02)
vi. A g	Apart from the factor mentioned  1	above (ii), name two other factors that affect the rate of chemical reactions are a contraction of the rate of chemical reactions.	n. 02)
vi.	Apart from the factor mentioned 1	above (ii), name two other factors that affect the rate of chemical reactions are a contraction of the rate of chemical reactions.	n. 02)
vi. A g i.	Apart from the factor mentioned  1  group of students burnt a cleand place is Magnesium a metal or non	above (ii), name two other factors that affect the rate of chemical reactions.  2. (notice of magnesium robbon in air and observations were recorded metal? (m. 01)	n. 02)
vi. A g	Apart from the factor mentioned  1  group of students burnt a cleand place is Magnesium a metal or non	above (ii), name two other factors that affect the rate of chemical reactions.  2. (note the rate of chemical reactions.  (in the rate of chemical reactions.  (in the rate of chemical reactions.)  (in the rate of chemical reactions.)	n. 02)
vi. A g i.	Apart from the factor mentioned 1	above (ii), name two other factors that affect the rate of chemical reactions.  2. (notice of magnesium robbon in air and observations were recorded metal? (m. 01)	ection. 02) ed.
vi. A g i. ii.	Apart from the factor mentioned 1	above (ii), name two other factors that affect the rate of chemical reactions.  2. (notice of magnesium robbon in air and observations were recorded metal? (m. 01)  I equation to indicate the chemical reaction taking place at the chemical reaction taking place	action. n. 02) ed. oove.
vi. A g i.	Apart from the factor mentioned 1	above (ii), name two other factors that affect the rate of chemical reactions.  2. (notice of magnesium robbon in air and observations were recorded metal? (m. 01)  Il equation to indicate the chemical reaction taking place above reaction (m. 01)	action.  n. 02)  ed.  oove.  . 02)
vi. A g i. ii.	Apart from the factor mentioned 1	above (ii), name two other factors that affect the rate of chemical reactions were recorded as a series of magnesium robbon in air and observations were recorded metal?  (m. 01)  Il equation to indicate the chemical reaction taking place at the chemical reacti	n. 02) ed
vi. A g i. ii.	Apart from the factor mentioned 1	above (ii), name two other factors that affect the rate of chemical reactions are a specific of magnesium robbon in air and observations were recorded metal?  (m. 01)  I equation to indicate the chemical reaction taking place at the chemical reaction taking pl	n. 02) ed
vi. A g i. ii.	Apart from the factor mentioned 1	above (ii), name two other factors that affect the rate of chemical reactions were recorded as a series of magnesium robbon in air and observations were recorded metal?  (m. 01)  Il equation to indicate the chemical reaction taking place at the chemical reacti	n. 02) ed

04. A	giver	is ar	n image of a brick, placed on a surface.	
	i.	W	hen the brick is in the position 'A',	
(18.	4)	(a)	Mark and name the force acting on the brick in the diagram	
			given. (m. 01) 5 m	
179 :00			(ii) structure 'V'	1
		(b)	What type of energy does the brick shown in the image have?	
· islerac	0.00	i fin	were sent northelisch ad assint vollerer energed uni ner 2 (m. 01) and a segment sed to	in :
(145)	(17)		Calculate the amount of energy the brick has, if its mass is 2 kg. (g = 10 ms <sup>-2</sup> )	(m. 02)
	and the Charles		The Plant of the Companies of the Compan	
		-		
			•	
	ii.	Wr	ite down the energy transformation that occurs when the brick reaches the position	n 'B'. (m. 01)
	iii.	Wh	nat is the velocity of the brick, when it reaches the base of the inclined plane?	(m. 02)
zariut is	A03 0 4-		our of students purcqual expace of mageenour ribbon and meet even recorder.	
d Lon	unida		addéd an squas volumei al slaus pydrochlera activas endr of delic la samuel	bub
	iv.	Stat	te an assumption you made in the above calculation.	(m. 01)
			We may 27 Among padasasanga sour adi ne awa kingbara pad W	
-	v.	An	nan drags 10 such bricks for a distance of 50 m.	
No.	1 De	(a)	How much work did he do there?	(m. 02)
	1.5		The growth was expectations contributed to the students. As one, the distributed to the contributed to the c	
				••••••
		(b)	Against what force should the work is done?	
r source		(0)	rigamst what force should the work is done.	(m. 01)
		(c)	If the time taken for that work is 100 seconds, what is the rate at which work is do	ne? (m. 02)
Ca wije	H-X.37	S.S.M.	Migra Sound pressure (Industrial Communication and Communication Communi	
	and the late			
B)	The	Tecci	ure exerted by a solid depends on the surface area it touches on a surface.	_
٠,			figure shows a cubical object whose length, width and height	$\Pi$
in the			m, 3 m and 5 m respectively.	7
Section 1			What is the maximum pressure this creates on a surface? (m. 02)	
100		\ <del>-</del> )	man process this creates on a surface: (m. 02)	3m
		WEIG	↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑	
			(1.6. (H))	

#### Answer only 3 questions.

05. A) Organisms are made	up	of	one	or	more	cells.
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What is a cell? (m. 01)

ii. Name the two types of organisms classified according to the organization of nucleus in a cell? (m. 01)

(b) Name a group of organisms with an organized nucleus that cannot be seen with the naked eye.

(m. 01)

iii. Write one function for each of the cell organelle given below. (m. 04)

Chloroplasts

Mitochondrion (b)

(c) Golgi body

Rough endoplasmic reticulum (d)

Chromatin body is present inside the nucleus of a cell. During cell division, the chromatin bodies can be seen as chromosomes.

Write two functions of chromosomes.

(m. 02)

(b) How many pairs of chromosomes are there in a human cell?

(m. 01)

Write two differences between a plant cell and an animal cell.

(m. 02)

Hemophilia is a genetic disorder that occurs due to a recessive gene linked to 'X' chromosome. B)

What is the main symptom of this disease? i.

Write the genotype of the women found in the society for following situations related to the disease. (Consider recessive gene for Hemophilia as, 'h' and dominant gene for Hemophilia as, 'H')

(a) Healthy woman

iv.

iv.

(b) Carrier woman (m. 02)

When a carrier female for Hemophilia is married to a healthy male,

State an inherited disorder that is caused by a gene mutation.

(a) Illustrate how the disorder is inherited in the first generation (F1) of offsprings.

(m. 02)

(b) Mention the genotype ratio of their progeny.

(m. 01)

(c) Mention the phenotype ratio of their progeny.

(m. 01) (m. 01)

06. A) Following table shows the atomic numbers and mass numbers of some elements. The symbols given are not true symbols of the respective elements.

Element	A	В	C	D	<b>E</b>	. Fr
Atomic number	9	10	11	12	14	9
Mass number	19	20	23	24	28	20

- The element C forms an ion of C +.
- The electronic configuration of C+ is 2, 8.
- Answer the questions using the given data and the symbol.

What are metallic elements from the above? i.

(m. 01)

Write the standard symbols of metallic elements identified in (i) above. ii.

(m. 02)

Write separately the elements that form a monovalent positive ion and a monovalent negative ion.

(a) monovalent positive ion

(b) monovalent negative ion

(m. 02)

Which of the above elements has stable electronic configuration? What are isotopes? V.

(m. 01) (m. 01)

(b) Which of the above given elements are isotopes?

(m. 01)

Which of the above elements can exist as gases at room temperature?

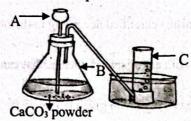
(m. 01)

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Science - Grade 10

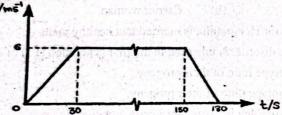
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Diagram given below shows an experiment done in the laboratory to produce carbon dioxide gas.



- (m. 01) Name the equipment 'A' shown in the setup. i. (m. 01) ii. What is the substance put in equipment 'A'? State an observation during the reaction in vessel 'B' (m. 01)iii. (m. 01)How does the method of collection of gas, shown in the figute is known as? iv. At the end of the experiment, the mass of the gas collected in the container 'C' is 11g. V.
- - Calculate the relative molecular mass of a molecule of carbon dioxide. (C=12,O=16) (m.02)
  - (b) Calculate the amount of moles of carbon dioxide molecules collected at the end of the experiment? (m. 02)

The motion of a bicycle due south along a linear horizontal path is shown in the following velocity-time graph.



- What is the time interval during which the bicycle traveled at constant velocity? (m. 01)i. (a) For how long has the bicycle been accelerating? (m. 01) ii. What is the acceleration of the bicycle? (m. 02)(m. 01)(c) What is the maximum velocity attained by the cyclist? The force exerted by the cyclist in the south direction for the time interval, 30-150s, is 10 N. (a) What is the value of the opposing force acting on the bicycle during this time? (m. 01) (m. 01) (b) What is the direction of that force? (m. 02) (c) How much work did the cyclist do during that time? The mass of the bicycle with the cyclist is 60 kg. What was the resultant force acting on the bicycle
- during the last 30 seconds of motion? (m. 02)
- An object moving on a surface gradually slows down and eventually comes to rest, due to the frictional force exerted by the surface to prevent the motion of the object.
  - Name the frictional forces acting in the following instances.
    - (a) When there is no relative motion between the objects even though a force is applied. (m. 01)
    - (b) When there is a relative motion between objects

(m. 01)

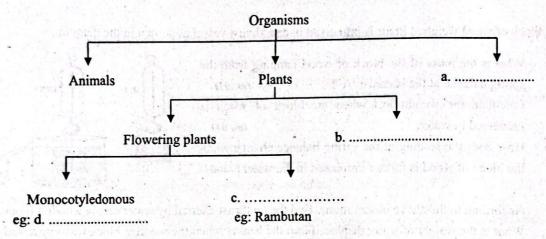
- ii. Name two factors that affect the limiting friction exerted by a surface.
- (m. 02)

iii. Write an advantage of increasing the friction.

(m. 01)

iv. Mention two methods used to reduce friction.

- (m. 02)
- v. Write steps of an activity to show that limiting friction does not depend on the surface area of the contact surfaces. (Observation and conclusion are not needed) (m. 02)
- 08. A) Classification of organisms into groups, is necessary for a successful study about them. An incomplete classification chart of living things is given below.



i. Write down the appropriate words for a, b, c and d.

(m. 02)

(m. 04)

ii. Mention one difference each, in the root system and leaf venation of 'Rambutan' plant and monocotyledonous plant.

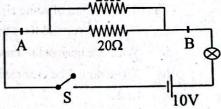
(m. 02)

Plant	Root system	Leaf venation
a.Rambutan	akkedibakabunyadike ay	forth spends ours to a
b.Monocotyledonous plant	Data de la Richard	

- iii. Mention the phyla/group to which animals with the following characteristics belong.
  - (a) Coelomate animals with a body divided into segments externally and internally.
  - (b) Triploblastic, coelomate animals with jointed legs.
  - (c) Animals showing metamorphosis and a three-chambered heart.
  - (d) Homoeothermic animals with external ear lobes and skin covered by hairs.
- B) Two resistors of 20  $\Omega$  are connected in parallel, a 10 V power supply and a switch are connected between its terminals A and B are shown in the figure.

(Assume that the internal resistance of the battery is zero.)

- i. State whether current flows from A to B or B to A? (m. 01)
- ii. What is the current flowing in the circuit when the switch 'S' is closed? (m. 02)



- iii. When one of the resistors is removed and the switch is closed, does the brightness of the bulb decrease or increase as compared to the instance mentioned in above (ii)? (m. 01)
- iv. Draw another method of connection for the two resistors given, in answer sheet. (m. 02)

potential difference between A and B and an ammeter is connected to measure the current flowing through the circuit. C) Gregor Mendel - a preiest - was the first to conduct scientific studies on the inheritance of characteristics. (m. 01) i. What is the name of the plant used for the study? (m. 02)ii. Mention two reasons for choosing the above mentioned plant by the priest. (m. 01)iii. What is known as a monohybrid cross? A block of wood weighed in air is immersed in an exhaust vessel as shown in the diagram. What is the mass of the block of wood hanging from the spring balance at the instance 'A'? (m. 01) Calculate the weight lost when the block of wood is ii. immersed in water. iii. How does the reading of the spring balance change when the block of wood is further immersed in the water? (m.01) iv. According to the above observations, find the up thrust exerted by water on the wooden block. (m.2 What is the waight of water displaced into the beaker when the wooden block was immersed in it? (The density of water is 1gcm<sup>-3</sup>) (m. 02)Write the scientist who proposed the law used in the above calculations? (m. 01)Write down the law used in the above calculations. (m. 02)The oxides of some elements belong to the third period are shown below. Na2O, MgO, Al2O3, SiO2, P2O5, SO3, Cl2O7 Among the above oxides i. a) Strongly dcidic oxide is? (m. 01) b) The amphoteric oxide is? c) The strongly basic oxide is? (m. 01) By which of the element in the third period, an oxide is not formed? ii. (m. 01) Draw the electronic configuration of an atom of that element mentioned above. iii. (m. 01) C) The position of some elements in the periodic table is shown below. What are vertical lines of this table called? i. What are horizontal lines of this table called? (m. 01) (1) ii. IV V VI VI Write down the electronic configuration of the element shown iii. D (2) C B (m. 01) F (3) In which group noble gases are included? iv. (m.01)

Draw a circuit diagram to illustrate the way in which a voltmeter is connected to measure the



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