සියලු ම හිමිකම් ඇවිරිණි/ KOg; gjpg;GupikAilaJ/ All Rights Reserved

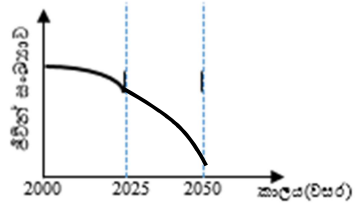
Ministry of Education

Grade11 | **Supportive Test 2023** | **34** | **S** | **I**

Science I/II | **Answer script**

Science Paper 1

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

1.	(A)	(i)		Increasing the global warming	01	15
		(ii)		Greenhouse gases such as CO_2,H_2O,CFC,CH_4	02	
		(iii)	(a)	Deforetation/ Burning fosil fules	02	
			(b)	 mark for the curve of the graph marksif a straight line is drawn ead of a curve mark for the curve that does not reach the zero.	02	
	(B)	(i)		The smart use of the natural resources by safegaurding the balance of the environment in such a manner that the future generation can use them in the future.	02	
		(ii)		(a) Reduce (Avoiding or minimizing the usage of unnecessary items) (b) Answer such as the usage of organic fertilizers instead of chemical fertilizers. (c) Recycle	03	
		(iii)		Wind power stations Solar power stations	01 01	
		(iv)		Taking steps in order to maitain good indoor air circulation / natural ventilation, Utilizing day light harvesting to reduce artificial lighting, Using thick curtains to reduce heat transfer, Rain water harvesting.	01	
2.	(A)	(i)		Nitrogen	01	
		(ii)		Lipid/ Carbohydrates / Protiens. Give marks for any two	02	
		(iii)		K	01	
		(iv)		Delaying blood clotting	01	

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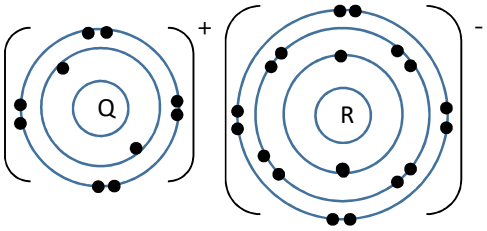
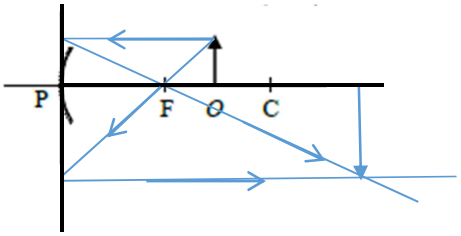
	(B)	(i)		A Endoplasmic reticulum B Golgi body	01/00	
		(ii)		E / Nuclear	01	
		(iii)		Production of energy	01	
		(iv)		Cell wall/ Chloroplasts/ Large central vacuole	01	
	(C)	(i)		Scion, Stock in correct order	01	
				Bud grafting/ Twig grafting	01	
		(ii)	(a)	A	01	
			(b)	C	01	15
		(iii)		Phase - Follicular phase – Hormone- Oestrogen Luteal Phase - Hormone - Progesterone	02	
3.	(A)	(i)		B	01	
		(ii)	(a)	Concentration	01	
			(b)	B and C	01	
		(iii)	(a)	$Mg + 2HCl \rightarrow MgCl_2 + H_2$	02	
			(b)	Cannot	01	
			(c)	Cu is prent above Hydrogen in the activity serie/ Reactivity of Cu is less than that of Hydrogen	01	
	(B)	(i)	(a)	Na	02	
			(b)	2, 4	01	
			(c)	R	01	
		(ii)	(a)	PR_4	01	
			(b)	In-between P an- Covalent bonds In- between Q and - Ionic bonds	02	
			(c)		01	15
4.	(A)	(i)	(a)	Not applying external unbalanced force/ / Forces are in equilibrium/ / Frictional force becoming equal to the force applying by the engine.	01	
			(b)	Acceleration	01	
			(c)	Applying an unbalanced force/Applying a resultant force / Applying an external unbalanced force	01	
		(ii)		Static frictional force	01	
		(iii)		Advantage – Can move without slipping./ Suppling the force requrired for the motion. Disadvantage – Tyres wear much faster.	01 01	
		(iv)	(a)	$2.5\ m\ s^{-2}$	01	
			(b)	20 m	02	
			(c)	Newton's First law.	01	
	(B)	(i)		Downwards due to the gravity (W) Upward from the legs (R)	01 01	15
		(ii)	(a)	R = W = mg = 80 x 10 = 800 N	01	
			(b)	↑ F = ma , R-W = ma , R-800 = 80 x 0.5 ,R = 40+800 , R = 840 N	02	
5.	(A)	(i)		Correct defenition of the photosynthesis	01	

		(ii)		Material - B , C Non material -A The answer should be given by using the given letters.	03	
		(iii)		Iodine solution	01	
		(iv)	(a)	Sucrose	01	
			(b)	Complex permanant tissues	01	
		(v)		• Removing the CO_2 from the environment that is accumilated due to f respiration and combustion. • Producing food for organisms.	02	
	(B)	(i)		Dominant - Blue (01), Recessive – White (01)	02	
		(ii)		BB - Blue bb - White	02	
		(iii)		<table><tr><td></td><td>B</td><td>b</td></tr><tr><td>b</td><td>Bb</td><td>bb</td></tr><tr><td>b</td><td>Bb</td><td>bb</td></tr></table> Genetype Blue -Bb White -bb	02	
		(iv)		Proveide marks for showing the possibility of obtaining pure breeding blue flower plants continously in generations.	02	
	(C)	(i)		Thyroid gland	01	
		(ii)		Adrenalin	01	
		(iii)		Converting glucose into glycogen	01	20
6.	(A)	(i)	(a)	Evolving of gas bubbles/ Colour change/ Reduction of the blue colour / Deposition of reddish brown colour substance on the pin.	02	
			(b)	Because pencil rods act as innert electrodes.	01	
		(ii)	(a)	A and C	02	
			(b)	<table><tr><td>Stong acid</td><td>Weak acid</td></tr><tr><td>• Release H^+ ions by complete ionisation in aqueous medium.</td><td>Release H + ions byincomplete ionisation in aqueous medium.</td></tr><tr><td>• No free acid moleculesm in the solution.</td><td>Fre acid molecules in the solution.</td></tr></table> For any of the above one difference.	02	
			(c)	I. Y, X, Z II. X, Z	01 01	
	(B)	(i)	(a)	P- Funnel Q- Watch galss R- Tripple beam balance S- Volumetric flask	02	
			(b)	For calculating Relative Molecular Mass (01) 160 g (01)	02	
			(c)	1 Mole 160 g , 0.1 Mole 160/10 =16 g	01	
			(d)	• Weigh 16g of $CuSO_4$ into a watch glass and transfer to the 250 cm^3 volumetric flask by using the wash bottle and the funnel. • Add about 2/3 of the required volume of water and shaking until mix completely. • After all the content dissolved well, add water carefully, keeping the eye at the levelof the volume mark ofthe flask. • Stopper the flask and mix again.	04	20
		(ii)		Giving the formula for the calculation of the mass (01) 10 g/100 g = 1/10	02	

				or 1/10 (01)		
7.	(A)	(i)			03	
		(ii)		Invert,real,mgnified give marks for any two features	02	
		(iii)		Shaving/ examining teeth/ Reflecting telescopes/ Microscope	01	
	(B)	(i)		$W = mg$ /500 kg x 10 (01)= 5000 N (01)	02	
		(ii)		$E = mgh$ / 500 kg x 10 m s^{-1} x 5 m (01) = 25 000 J (01)	02	
		(iii)		Kinetic energy and potential energy	02	
		(iv)	(a)	½ $m v^2 = mgh$ or v = $\sqrt{2gh}$	01	20
			(b)	$v = \sqrt{2x\ 10\ x\ 5}$ = 10 m s^{-1}	02	
		(v)	(a)	Work = 5000 N x 5 m = 25000 J	02	
			(b)	25000 J/4 s = 6250 W	01	
			(c)	$E = VIt$ / $I = E/Vt$ = 25000 J / 4 x 230= 27.17 A or $P = VI = P/V$ = 6250/230 = 27.17 A	02	
8.	(A)	(i)		X - O_2 Y - CO_2	02	
		(ii)		Diffusion	01	
		(iii)		² Thin walls ² Moistened walls ² Highly vascularized surface • High surface area	02	
	(B)	(i)		The contractions and dilations of heart muscle are known as the heartbeat.	01	
		(ii)		Bicuspid valve / Tricuspid valve	01	
		(iii)		Atrial and Ventricular relaxation (Complete cardiac diastole)	01	
	C	(i)		Nephron	01	
		(ii)		Urea/ Uric acid	01	
		(iii)		Fecal matter is the undigested materials of the digestion process. Not a product of metabolic reactions.	01	
	D	(i)		Parrelal method	01	
		(ii)		Electromotive force	01	
		(iii)		$V = IR$, $I = V/R$= 9 V/6 = 1.5 A	01	
		(iv)		$E = VIt$ = 9 V x 9/4 A x1s = 20.25 J	01	
		(v)		Increase	01	
	D	(i)		Upthrust	01	
		(ii)	(a)	Decrease	01	20
			(b)	Decreaee	01	
			(c)	Up thrust reduces when the volume of water decreases. As a result the weight ofthe object increases. Then the resultant force acts downwards.	02	
9.	(A)	(i)		From Zn plate to Cu plate	01	
		(ii)		Cu plate	01	

		(iii)		$Zn\ (s) \longrightarrow Zn^{2+}\ (aq) + 2e$	01	
		(iv)	(a)	Zn	01	
			(b)	Welding to the hulls of the ships sailing in the sea / Coating under ground GI pipes.	01	
	(B)	(i)	(a)	PVC- Gutters, Water pipes, conduits and flexible pipes.	01	
			(b)	Teflon- Making non- stick cooking pans, snow shoes.	01	
		(ii)		Ethene	01	
		(iii)		Starch / rubber/protien /Cellulose	02	
	(C)	(i)	(a)	Bulb glows and off	01	
			(b)	From X to Y	01	
			(c)	Flemming's right hand rule.	01	
		(ii)	(a)	$\frac{V_p}{V_s} = \frac{N_p}{N_s}$ (01) $\frac{0.25\ V}{V_s} = \frac{100}{1200}$ (01) V_s = 12 x 0.25= 3 V (01)	03	
			(b)	Dynamo/ Moving coil microphone	01	20
		(iii)	(a)	To Q	02	
			(b)	Direct current motor	01	