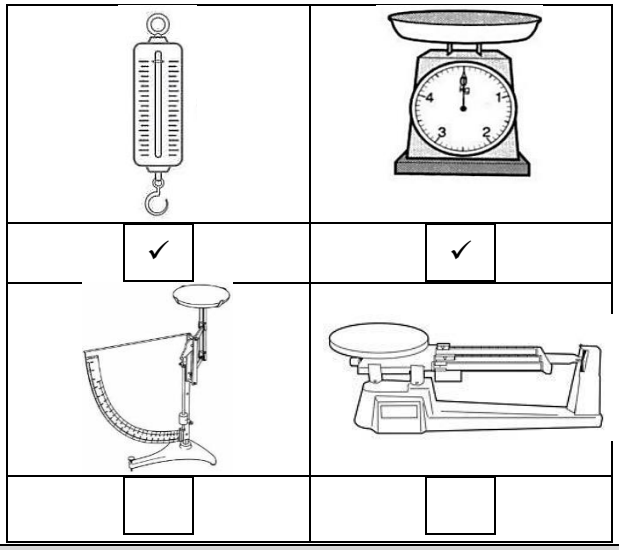
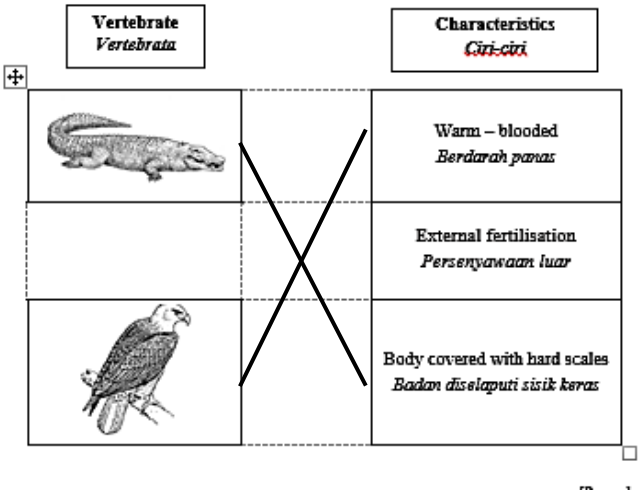
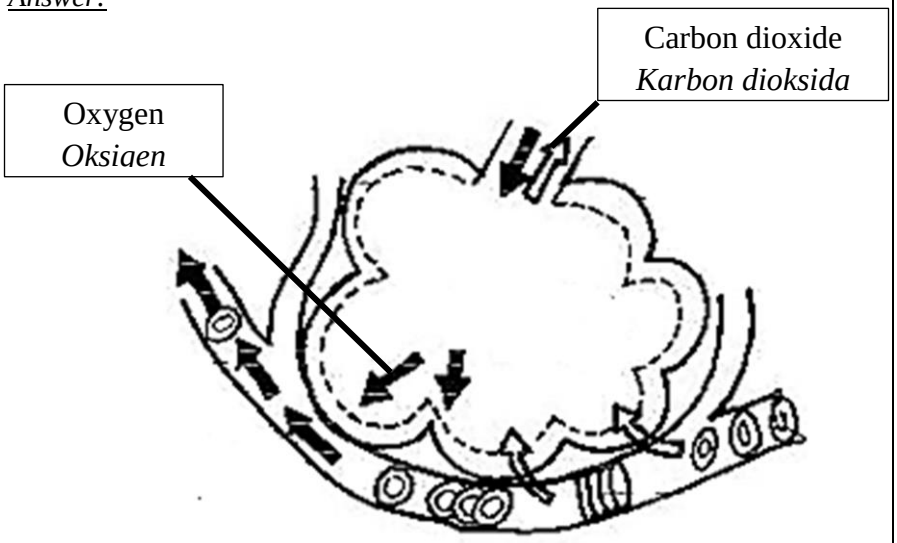
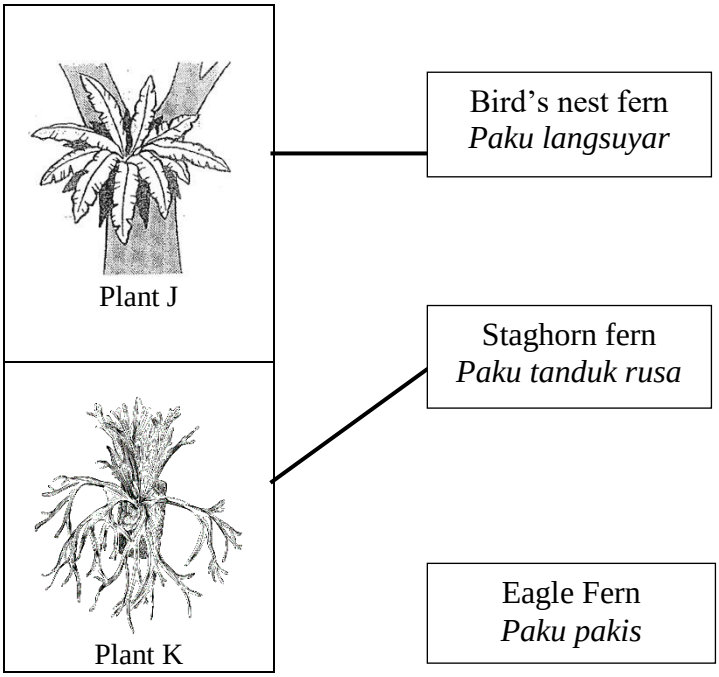
PERATURAN PEMARKAHAN
PEPERIKSAAN PERCUBAAN SAINS PT3
SEKOLAH BERASRAMA PENUH
2018

No			Rubric	Mark	
				Sub	**Total**
1	(a)		***Able to circle the correct S.I unit for the measurement below***		
			Answer:		
			(i) Weight / *Berat*: Newton (N) / *Newton (N)* ; ~~Kilogram (kg)~~ / *Kilogram (kg)*	1	
			(ii) Electric current / *Arus elektrik*: ~~Voltan (V)~~ / *Voltan (V)* ; Ampere (A) / *Ampere (A)*	1	2
	(b)		***Able to tick (✓) on the two tools used to measure the weight.***		
			Answer:	1 + 1	2
					
			TOTAL	**4**	
2	(a)		***Able to mark two characteristics of living organisms.***		
			Answer:	1	
			(i) Reproduce / *Membiak* : √		
			(ii) Still / *Pegun* :		2
			(iii) Breath / *Bernafas* : √	1	
			(iv) Make their own food / *Membuat makanan sendiri* :		

No			Rubric	Mark	
				Sub	Total
	(b)		***Able to match the following vertebrates with the correct characteristics.*** *Answer:*  	1 1	2
			TOTAL	**4**	
3.	(a)	(i)	***Able to complete the boxes below with the words given.*** *Answer:*  	1 + 1	2
		(ii)	***Able to fill in the blanks to complete the statements below.*** *Answer:* (i) Diffusion *Resapan* (ii) Moist *Lembab*	1 1	2
			TOTAL	**4**	

No			Rubric	Mark	
				Sub	Total
4	(a)		***Able to underline the correct answer in the bracket provided.*** *Answer:* (i) Gas/ gas (ii) Slower/ *lambat*	1 1	2
	(b)		***Able to classify floating objects and immersed objects in water.*** *Answer:* (i) Cork/ *gabus* (ii) Plastic/ *plastik* (iii) Glass/ *kaca* (iv) Coin/ *duit syiling* *Remarks* Correct (i) and (ii) – 1 mark Correct (iii) and (iv) – 1 mark		2
			TOTAL	**4**	
5	(a)		***Able to match the plant and it's name.*** *Answer:* 	1 1	2
	(b)	(i)	***Able to state the interaction between both plants with the host tree.*** *Answer:* Commensalism/ *Komensalisma*	1	
		(ii)	***Able to state the benefits to the plant*** Answer To obtain sunlight / *Untuk mendapatkan cahaya* (*matahari*) //	1	2

			To obtain water (at it's root) / *Untuk mendapatkan air (pada akarnya)* **Any one*		
	(c)		***Able to state the role of the fern ecologically.*** <u>*Sample answer:*</u> P1: Provide a source of food or medicine for animals and human// P2: Filter toxins (such as heavy metals) from the environments // P3: Provide a bioindicator for the health of an ecosystem P4: Provide microhabitats/ shelter and shades to small animals *P1: Menyediakan sumber makanan atau ubat untuk haiwan dan manusia//* *P2: Penapis toksin, seperti logam berat, dari persekitaran //* *P3: Menyediakan bioindicator untuk tahap pencemaran ekosistem//* *P4: Menyediakan tempat tinggal / perlindungan dan teduhan untuk haiwan kecil* * *Any two answers*	1 1	2
			TOTAL	**6**	
6.	(a)		***Able to state (/) for the correct blood group which are universal donors and universal recipients.*** <u>*Answer:*</u> R: Blood group AB *Kumpulan darah AB* D: Blood group O *Kumpulan darah O*	1 1	2
	(b)		***Able to choose which recipient is safe for blood transfusions and give explaination*** <u>*Answer:*</u> R: Recipient N *Penerima N* E: AB is a universal recipient /can accept all types of blood *AB adalah penerima universal / boleh menerima semua jenis darah*	1 1	2
	(c)		***Able to explain what happen to the human blood cells after blood transfussion*** <u>*Answer:*</u> P: Coagulation / Agglutination *Penggumpalan / Aglutinasi* E: Recipient's blood is not compatible with the donor's blood *Darah penerima tidak serasi dengan darah penderma*	1 1	2
			TOTAL	**6**	

No			Mark Scheme	Mark	
				Sub	Total
7	(a)		***Able to label stages P and Q in water purification system.*** *Answer:* P: Aeration tank/ *Tangki pengudaraan* Q: Sedimentation tank/ *Tangki pengenapan*	 1 1	 2
	(b)		***Able to explain what happens in the coagulation tank*** *Answer:* P1: Alum is added to form (coarse) granular materials *Alum ditambah untuk membentuk bahan mendak (yang kasar)* P2: (Slaked) Lime is added to reduce the acidity of the water *Kapur (mati) ditambah bagi mengurangkan keasidan air*	 1 1	 2
	(c)		***Able to state two effects if the water filter is not properly maintained*** *Sample answer:* P1: suspended solids/ sediments/ microorganisms are trapped in water filters *pepejal terampai/ keladak/ mikroorganisma yang terperangkap pada penapis air* P2: consumers are exposed to the risk of health problems *pengguna terdedah kepada risiko masalah kesihatan* **accept any reasonable answer*	 1 1	 2
			TOTAL	**6**	
8	(a)		***Able to state ways to separate the glasses based on the effect of heat on matter*** *Sample answer:* P1: Immerse the glass at the bottom into hot water so that it can expands P2: Pour cold water into the glass at the top so that it can shrinks P3: There will be space between the two glasses that allows them to be separated *P1: Rendamkan gelas yang berada di bawah dengan air panas supaya ia mengembang* *P2: Masukkan air sejuk ke dalam gelas yang berada di atas supaya ia mengecut* *P3: Wujud ruang diantara kedua-dua gelas yang membolehkan gelas terpisah*	 1 1	 2
	(b)	(i)	***Able to state whether the colour or the surface, that affect the rate of absorption and give explanation*** *Answer:* F: The colour *Warna* E: Darker colour absorb more heat *Warna yang gelap menyerap lebih banyak haba*	 1 1	 2

No			Mark Scheme	Mark	
				Sub	Total
		(ii)	**Able to choose the correct material and give explanation** *Answer:* F: Azizah should choose material Q *Azizah perlu memilih bahan Q* E: Its absorb the least heat/ poorest conductor of heat *Ia menyerap paling kurang haba/ konduktor haba yang paling lemah*	1 1	2
			TOTAL	**6**	
9	(a)	(i)	***Able to give one other element in sand*** Answer: Oxygen *Oksigen*	1	1
		(ii)	***Able to state what happened in the experiment.*** Answer: No reaction/ nothing happened/ no change *Tiada tindak balas/ tiada apa berlaku/ tiada perubahan*	1	1
	(b)	(i)	**Able to give a reason why water is not suitable to be used as a fire extinguisher to put out oil fires.** Answer: P1: Oil is less denser than water/ floating on water *Minyak mempunyai ketumpatan yang lebih rendah berbanding air/ terapung di permukaan air* P2: Water will spread the fire as it flows *Air akan menyebarkan api kerana ia mengalir*	1 1	2
	(c)	(ii)	***Able to choose one material from Table 9 that is suitable to be used as a fire extinguishers to put out oil fires and explain.*** Answer: C : Sand *Pasir* E : Sand can cut of the supply of oxygen/ form a layer to block oxygen *Pasir boleh menghalang oksigen dibekalkan ke air/ membentuk lapisan menghalang oksigen*	1 1	2
	(d)		***Able to explain the characteristics of clay as a main material to form porcelain and ceramics*** Sample answer: P1: Clay is soft *Tanah liat lembut* E1: Easy to be mold in many shape *Senang dibentukkan/ diacukan kepada pelbagai bentuk*	1 1	2

			P2: Clay is insoluble in water *Tanah liat tidak larut air* E2: Can fill up gravy in dishes//plates//bowls/ water in drink glass *Boleh diisi dengan kuah/lauk dalam mangkuk//bekas seramik / air untuk minuman dalam gelas seramik* P3: Clay is not affected by heat *Tanah liat tidak ada kesan oleh haba* E3: Can hold hot food/ hot drink *Boleh diisi dengan makanan panas / minuman panas* Note : *Any E with correct P – 2 marks*		
			TOTAL	**8**	
10	(a)	(i)	***Able to state which basket.*** Answer: Ali' s basket and Tini's basket *Bakul Ali dan Bakul Tini*	1	1
		(ii)	***Able to state what happen.*** Answer: Syukor's basket will move down and fall off the planck. *Bakul Syukor akan bergerak dan jatuh dari kepingan kayu*.	1	1
		(iii)	***Able to state how to solve the problem and give reasons.*** Sample answer P1: Only remove Tini's basket , put each of Syukor's basket at each end of the plank. *Hanya alihkan bakul Tini, letak bakul Syukor di hujung kedua belah kayu.* P2: Because both Syukor's basket weight the same (which is 210N) will stabilized the plank. *Kerana berat kedua-dua bakul Syukor adalah sama (iaitu 210N) akan menstabilkan kepingan kayu.*	1 1	2
	(b)	(i)	***Able to calculate the weight of the tree stump.*** Answer Load x Distance of Load = Effort x Distance of effort *Daya x Jarak daya = Beban x jarak beban* W x (1.2 – 0.8) = 300 x 0.8 W = 240 / 0.4 W = 600 N **substitution – 1m, final answer – 1m*	1 1	2
		(ii)	***Able to explain the consequences.*** Answer F: The distance of effort will increase . *Jarak daya akan bertambah.*	1 1	2

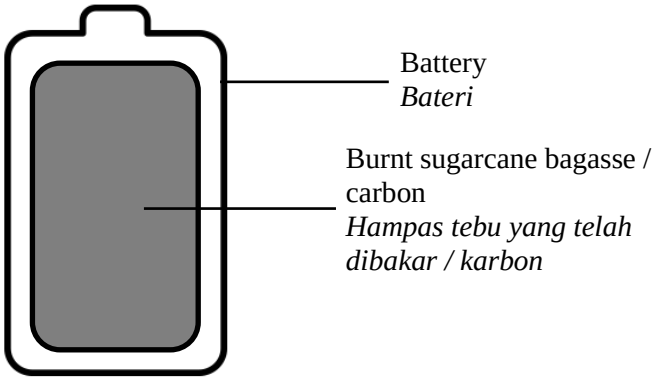
			E: Thus a smaller effort will produce a larger force. *Oleh itu, daya yang kecil akan menghasilkan daya yang besar*.		
			TOTAL		**8**
11	(a)		***Able to identify and describe about the given transformer*** <u>Answer</u> P1: Step down transformer *Transformer injak turun* P2: The number of turns in the primary coil is more than the secondary coil (vice versa) *Bilangan lilitan pada gegelung primer lebih banyak daripada bilangan lilitan gegelung sekunder (vice versa)*	1 1	2
	(b)		***Able to compare and contrast both of the transformer.*** <u>Answer</u> Similarities (S): - Same input voltage for both transformer *Voltan input adalah sama untuk kedua – dua transformer* Differences (D): - The output voltage for transformer A is lower than transformer B. *Voltage output transformer A lebih rendah berbanding transformer B. (vice versa)* - Number of turns in the primary coils at transformer A is more than transformer B. *Bilangan lilitan gegelung primer transformer A lebih banyak berbanding transformer B. (vice versa)* - Number of turns in the secondary coils at transformer A is less than transformer B. *Bilangan lilitan gegelung sekunder transformer A kurang berbanding transformer B. (vice versa)* <u>*Remarks*</u>*:* Must have 1 similarity and 1 difference	1 1	2
	(c)		***Able to choose which transformer will increase the voltage.*** <u>Answer</u> F: Transformer X E: Need to increase the voltage to reduce the loss of energy in the form of heat in the transmission cables. *Perlu meningkatkan voltan untuk mengurangkan kehilangan tenaga dalam bentuk tenaga haba di dalam kabel penghantaran.*	1 1	2
	(d)		***Able to suggest the safety measures that must be taken to avoid any accident.*** <u>Sample answer</u> S1: Avoid touching the switch with wet hands to avoid electric shock from occurring.		

			Elakkan menyentuh suis dengan tangan yang basah bagi mengelakkan berlakunya renjatan elektrik. S2: Avoid putting nails into the walls near the switch. *Elakkan meletakkan paku ke dalam dinding berhampiran suis.* **Accept any reasonable answers*	2	2
	(e)		***Able to justify electricity safely.*** <u>Answer</u> F: No *Tidak* P1: The electric iron has broken insulation wires *Wayar seterika elektrik terdedah* P2: Too many plugs are connected to one power supply. *Terlalu banyak palam disambungkan pada satu sumber kuasa.* <u>*Remarks*</u> Must have reason to get 1 mark	1 1	2
			TOTAL		**10**
12	(a)	(i)	***Able to state the support system for the plant in Diagram 11.1.*** <u>Answer:</u> Prop root *Akar sokong*	1	1
		(ii)	***Able to explain the importance of the support system in 11(a)(i) to the plant.*** <u>Sample Answer</u> Have big / massive trunk *Mempunyai batang yang besar* Have big branches *Mempunyai dahan yang besar* Tall tree *Tumbuhan yang tinggi* Large leaves and branches / Plant with big canopy *Daun dan ranting yang banyak / Tumbuhan dengan kanopi yang besar* <u>*Remark:*</u> 1 point – 1 mark 2 point – 2 marks Maximum 3 point – 3 marks	1 1 1	3
	(b)	(i)	***Able to state the support system that allows plant P to float.*** <u>Answer:</u> Air space (in the leaf stalks) *Ruang udara (dalam tangkai daun)*	1	1

		(ii)	***Able to explain why the plants P in Diagram 11.2 float on water*** Answer: E1: Air space filled in with air *Ruang udara diisi dengan udara* E2: Air has lower density than air / making plant P to be lighter *Udara mempunyai ketumpatan yang rendah berbanding air / menjadikan tumuhan P lebih ringan*	 1 1	 2
		(iii)	***Able to suggest Rahman can make sure the plant Q in Diagram 11.2 stay upright.*** **Answer:** M: Add water to the container until the plant upright. *Menambahkan air ke dalam bekas sehingga tumbuhan tersebut tegak.* E1: The plants have air space in the stem *Tumbuhan tersebut mempunyai ruang udara di dalam batang* E2: Use water buoyancy as support. *Menggunakan daya apungan air sebagai sokongan.* ***Remarks*** Method : 1 mark Explanation : 1 point – 1 mark Max : 2 point – 2 marks	 **1** **1** **1**	 **3**
13	(a)	(i)	***Able to name force R*** Answer Frictional force *Daya geseran*	 1	 1
		(ii)	***Able to state one disadvantage of the force stated in 13(a)(i)*** Answer The tyre of a bicycle / the soles of shoes get worn out (quickly) *Tayar basikal/ tapak kasut akan menjadi haus (dengan cepat)*	 1	 1
	(b)	(i)	***Able to state which surface has the greater frictional force and give explanation*** Answer F: Sand paper surface *Permukaan kertas pasir* E: Rougher surface has greater frictional force *Permukaan yang kasar mempunyai daya geseran yang besar*	 1 1	 2
		(ii)	***Able to compare the frictional force produce and give explanation*** Answer D: The greater frictional force produce *Daya geseran yang lebih besar terhasil*	 1	 2

			E: because weight of the object affects the magnitude of the frictional force *kerana berat objek mempengaruhi magnitud daya geseran*	1	
	(c)	(i)	***Able to state the relationship between the reading of spring balance and the mass of the weight*** <u>Answer</u> (MV) As the mass of the weight increases, (RV) the reading of the spring balance increases *Apabila jisim pemberat meningkat, bacaan neraca spring turut meningkat*	2	2
		(ii)	***Able to state what happen to the spring balance and give explaination*** <u>Sample answer</u> F: The spring on the spring balance has exceed its elasticity limits *Spring yang terdapat pada neraca spring telah melampaui had kenyal* E: The spring cannot returns to its original form *Spring tidak boleh kembali kepada bentuk asalnya*	1 1	2
	(d)		***Able to write the correct procedure*** <u>Sample answer</u> 1. The solar car model is placed on a track. *Model kereta solar diletakkan di atas landasan.* 2. Install wider tires on the solar car model *Pasangkan tayar yang lebih lebar pada model kereta solar* 3. Record the magnitude of frictional force exerted using a spring balance *Rekod nilai daya geseran yang terhasil menggunakan neraca spring* . 4. Repeat the experiment using the narrower tyre. *Ulang eksperimen di atas menggunakan tayar yang lebih kecil* 1 mark/ *markah* for the correct steps *Untuk langkah yang betul* 1 mark/ *markah* for the correct sequence *Untuk susunan yang betul*	1+1	2
			TOTAL		**12**

No			Mark Scheme	Mark	
				Sub	Total
14	(a)	(i)	***Able to state the source of energy for plants*** <u>Answer</u> Sun *Matahari*	1	1
		(ii)	***Able to state the energy changes occurring in the biomass boiler*** <u>Answer</u> Chemical energy → Heat energy *Tenaga kimia → Tenaga haba*	1	1
	(b)	(i)	***Able to explain how biomass energy sources affect the value of energy produced in Malaysia.*** <u>Answer</u> Biomass energy resources from forest residue generates the highest value of energy in Malaysia *Sumber tenaga biojisim dari sisa hutan menjana nilai tenaga tertinggi di Malaysia*	1	1
		(ii)	***Able to describe how the biomass technology introduced in our country could gave positive impacts to the environment.*** F1: Biomass is a renewable energy source F2: Biomass helps climate change by reducing greenhouse gas emissions F3: Biomass can help clean our environment. F1: *Biojisim adalah sumber tenaga boleh diperbaharui* F2: *Biojisim membantu perubahan iklim dengan mengurangkan pelepasan gas rumah hijau* F3: *Biojisim boleh membantu membersihkan alam sekitar kita.*	1 1	2
	(c)		***Able to give reasons on the problems of implementing biomass technology in Malaysia*** <u>Sample answer</u> F1: Issues related to cost E1: Biomass enhance the collection, handling, and transportation costs *F1: Isu berkaitan dengan kos* *E1: Biojisim meningkatkan pengumpulan, pengendalian, dan pengangkutan kos* F2: Issues related to availability of raw material E2: There is essential need to assess, design and schedule the biomass supply chain to meet all the requirements / to have an efficient biomass supply chain *F2: Isu berkaitan dengan ketersediaan bahan mentah biojisim* *E2: Terdapat keperluan penting untuk menilai/ merekabentuk dan menjadualkan rantaian bekalan biojisim untuk memenuhi semua keperluan / untuk mempunyai rantaian bekalan biojisim yang cekap* ** Accept any reasonable answer*		

	(d)		***Able to sketch a diagram and explain the model***  M: Bake the sugar cane in the crucible and put the carbon into the inside of the battery *Bakar hampas tebu di dalam mangkuk pijar dan masukkan karbon ke bahagian dalam bateri* E: Carbon / fuel acts as a source to generate electricity *Karbon/ bahan bakar bertindak sebagai sumber untuk menjana tenaga elektrik*	1 1 1	3
			TOTAL	**12**	

END OF MARKING SCHEME