

SULIT
1511/2 (PP)
Science
Paper 2
Marking
Scheme
September
2009

PEPERIKSAAN PERCUBAAN
SIJIL PELAJARAN MALAYSIA
NEGERI PERAK
2009

SCIENCE

Paper 1 and 2

MARKING SCHEME

UNTUK KEGUNAAN PEMERIKSA SAHAJA

Peraturan pemarkahan ini mengandungi halaman bercetak

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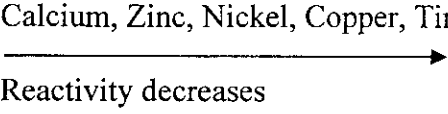
PAPER 1

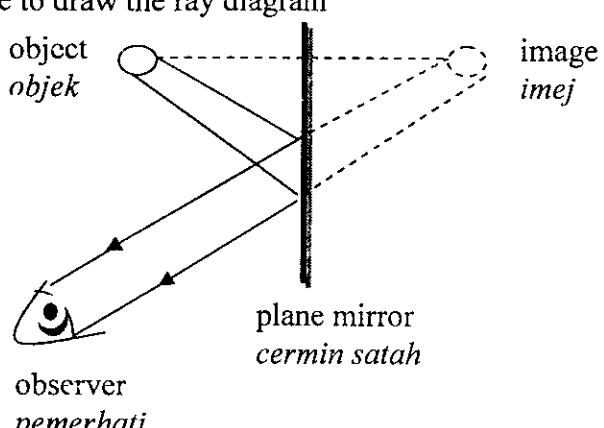
Marking Scheme

1	D	11	B	21	B	31	C	41	D
2	D	12	D	22	C	32	C	42	D
3	C	13	A	23	C	33	D	43	D
4	B	14	C	24	B	34	C	44	C
5	A	15	C	25	C	35	B	45	B
6	C	16	D	26	D	36	D	46	A
7	B	17	A	27	A	37	A	47	C
8	A	18	A	28	B	38	D	48	A
9	D	19	C	29	B	39	B	49	A
10	C	20	C	30	B	40	B	50	D

PEPERIKSAAN PERCUBAAN
SIJIL PELAJARAN MALAYSIA
2009

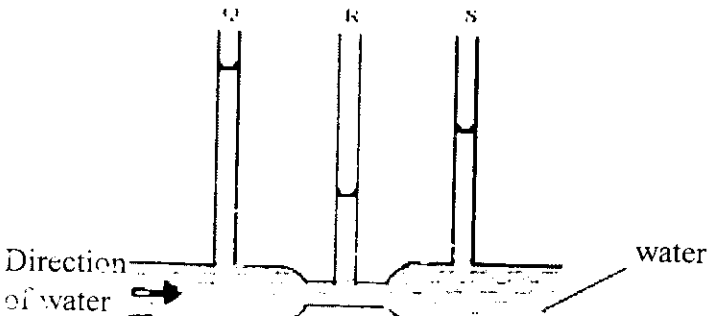
SCIENCE – PAPA E 2
PERATURAN PEMARKAHAN
SECTION A

Question No	Marking criteria	Mark	Total marks	
1	(a)	Able to draw a bar chart		
		Bar chart	1	
		Correct height of bar (one wrong no mark)	1	2
	(b)	Able to state the relationship		
	The more reactive the metals , the higher the amount of gas collected	1	1	
	(c)	Able to arrange the reactivity of 4 metals accordingly		
	Calcium, Zinc, Nickel, Copper, Tin  Reactivity decreases Note (all correct 2 marks) (2/3 correct 1 mark)	2	2	
		Total	5	

Question No	Marking criteria	Mark	Total marks
2	(a)	Able to draw the ray diagram	
			
		1.Light rays from object to observer	1
		2.Light rays from line from plane mirror to image	1
	(b)	Able to state the principle	
	Reflection / reflect	1	1
	(c)	(i) Able to predict correctly Q and R	1

	Note 1. 1 correct = 0 mark 2. 2 correct = 1 mark		
	(ii) Able to give the characteristic Virtual / laterally inverted / upright / Object size = image size / object distance = image distance	1	2
		Total	5

Question No	Marking criteria	Mark	Total marks
3	(a) The more concentrated penicillin is used, the larger diameter of clear area is obtained.	1	1
	(b) Size of penicillin disc	1	1
	(c) Disc Y	1	1
	(d) A substance that makes the surrounding area of the penicillin disc clear.	1	1
	(e) N and P	1	1
		Total	5

Question	Marking Criteria	Mark	Σ Mark
4 (a)	<i>Able to state the relationship between the speed of water and the pressure correctly</i> <u>Sample answer</u> 1. The higher the speed of air flow, the lower the air pressure. 2. The speed of water increase, the pressure in the water decrease.	1	1
(b)	<i>Able to draw the water levels accurately</i>  <u>Note</u> 1. 3 levels correct – 2 marks 2. 2 levels correct – 1 mark	2	2

	3. 1 level correct – no mark		
(c)	<i>Able to state the highest pressure glass tube correctly</i> S	1	1
(d)	<i>Able to state the application of Bernoulli's principle in daily life correctly</i> <u>Sample answer</u> 1. Air flight 2. Insect spray 3. Bunsen burner 4. Carburetor of a car <u>Note</u> Either one of the answer or other acceptable answer	1	1
			5

SECTION B

Question No	Marking criteria	Mark	Total marks
5	(a) P - Meiosis	1	2
	Q - Mitosis	1	
	(b) Ovary	1	1
	(c) Identical twins	1	1
	(d) <u>Sample answers</u> 1. share one placenta 2. have identical chromosomes and genes 3. have same sex both boys /both girls 4. similar characteristic features	1	1
	(e) Girl / female	1	1
		Total	6

Question No	Marking criteria	Mark	Total marks
6	(a) larva	1	1
	(b) These mosquitoes transmit pathogens /diseases from patients to healthy people	1	1
	(c) Has black stripes on the abdomen and legs.	1	1

	(d)	Plasmodium	1	1
	(e)	<u>Sample answers</u> (i) Spray ponds, drains and stagnant water with oil to prevent larva from breathing at the surface of water (ii) Carry out fogging or spraying insecticides to kill adult mosquitoes (iii) Sleep under mosquito net (iv) Clear the house compound from empty tins and containers which can hold stagnant water. (v) Fix wire gauze at the doors and windows to prevent mosquitoes from getting into the house. (Accept any other relevant answers)	2	2
			Total	6

Question No	Marking criteria			Mark	Total marks
7	(a)	(i)	Saturated fat	1	2
		(ii)	Unsaturated fat	1	
	(b)	(i)	Derived from animal	1	2
		(ii)	Higher melting point	1	
			<u>Sample answers</u> 1. mostly solid at room temperature 2. raise total cholesterol and LDL (bad cholesterol level)		
	(c)	Atherosclerosis		1	1
	(d)	cholesterol		1	1
				Total	6

Question	Marking Criteria	Mark	Σ Mark
8 (a)	<i>Able to name the type of food processing method accurately</i> X: Dehydration Y: pasteurization	1	2
		1	
(b)	<i>Able mark (✓) for the temperature used for pasteurization correctly</i>	1	1

63°C for 30 minutes	72°C for 30 minutes	72°C for 15 seconds
✓		✓

Note

1. 2 correct – 1 mark
2. 1 correct – no mark

(c)	<p><i>Able to state the disadvantages of pasteurization.</i></p> <p><u>Sample answer</u></p> <ol style="list-style-type: none"> 1. The pasteurized milk is not sterile 2. bacterial spores are not kill 3. Pasteurized milk can be keep for few days only in cold conditions 4. Foods does not last long 5. Foods need to be keep in refrigerator <p><u>Note</u> Either one of the answer or other acceptable answer</p>	1	1
(d)	<p><i>Able to name the type of processed food correctly .</i></p> <p><u>Sample answer</u></p> <ol style="list-style-type: none"> 1. Dried fish 2. coffee powder 3. milk powder 4. groundnuts 5. instant noodle: <p><u>Note</u> Either one of the answer or other acceptable answer</p>	1	1
(e)	<p><i>Able to name the information needed on the food labels.</i></p> <p><u>Sample Answers</u></p> <ol style="list-style-type: none"> 1. name and address of manufacturer 2. name / type of food 3. expiry date 4. ingredients 5. net weight <p><u>Note</u> Either one of the answer</p>	1	1
			6

Question No	Marking criteria		Mark	Total marks
9	(a)	(i) Radio wave	1	2
		(ii) Gamma rays	1	
	(b)	Gamma rays ,X- rays , visible light ,microwave and radio wave	1	1
	(c)	(i) X - wavelength	1	2
		(ii) Y - amplitude	1	
	(c)	The distance between any point and the next identical point // The distance between two consecutive crests or between two consecutive troughs	1	1
			Total	6

Question No	Marking criteria		Mark	Total marks
10	(a)	Able to state the hypothesis correctly		
		The more reactive the metal, the more heat energy is released / Reaction of metal and acid releases heat energy to the surrounding	1	1
	(b)	(i) Able to write the aim of the experimet To study heat change in the reaction of metals with acids	1	1
		(ii) able to state the variables Constant : volume of acid / hydrochloric acid Manipulated : types of metals Responding : Temperature / thermometer reading. Note 1 correct = 0 mark , 2 correct = 1 mark , 3correct = 2 mark	2	2
		(iii) Able to list the apparatus and materials Boiling tube, 25ml measuring cylinder, thermometer, powdered Zinc. powdered Iron, spatula, <u>hydrochloric acid</u> . Hydrochloric acid is compulsory		1

	(iv) Able to list procedures correctly								
	1. Measure 20cm ³ of acid and pour into the boiling tube.	1							
	2. Add the powdered Zinc / Iron into the boiling tube	1							
	3. Observe and record the temperature.	1							
	4. Steps 1, 2, and 3 using powdered zinc / iron.	1	4						
	(v) Able to tabulate data correctly.								
	<table border="1"> <tr> <td>Types of metals</td> <td>Temperature °C</td> </tr> <tr> <td>Powdered Zinc / Iron</td> <td></td> </tr> <tr> <td>Powdered Iron / Zinc</td> <td></td> </tr> </table>	Types of metals	Temperature °C	Powdered Zinc / Iron		Powdered Iron / Zinc		1	1
Types of metals	Temperature °C								
Powdered Zinc / Iron									
Powdered Iron / Zinc									

Question No	Marking criteria	Mark	Total marks
11	(a) <ol style="list-style-type: none"> 1. gas X is carbon dioxide 2. Solar radiation reaches the Earth to warm up the Earth's surface. Some reflected back to space. 3. Some radiated as infrared as infrared radiation which is absorbed and trapped by gas X. 4. The trapped infrared radiation causes an increase in the Earth's temperature and leads to global warming 	1 1 1 1	4
	(i) The increase in temperature is caused by the increase in the amount of greenhouse gases	1	1
	(ii) Greenhouse gases especially carbon dioxide from combustion of fossil fuel//open burning // cutting down of trees	2	2
	(iii) Steps to be taken include: <ul style="list-style-type: none"> - Using public transport//practising car-pooling to reduce number of vehicles on road - Stop burning of rubbish//open burning 		

		- Planting trees //having a garden (Accept any other relevant answers)	1	3
		Total		10

Question No	Marking criteria			Mark	Total marks														
12	(a)	<table border="1"> <tr> <td>Thermoplastics</td> <td>Characteristics</td> <td>Thermoset</td> </tr> <tr> <td>Can be repeatedly melted</td> <td>Effect of heat</td> <td>Cannot be repeatedly melted</td> </tr> <tr> <td>No cross linked</td> <td>Bonding</td> <td>Cross - linked</td> </tr> <tr> <td>Easily attacked by organic solvents</td> <td>Solubility</td> <td>Withstand solvents</td> </tr> <tr> <td>Low melting point</td> <td>Melting point</td> <td>High melting point</td> </tr> </table>	Thermoplastics	Characteristics	Thermoset	Can be repeatedly melted	Effect of heat	Cannot be repeatedly melted	No cross linked	Bonding	Cross - linked	Easily attacked by organic solvents	Solubility	Withstand solvents	Low melting point	Melting point	High melting point	4	4
Thermoplastics	Characteristics	Thermoset																	
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Easily attacked by organic solvents	Solubility	Withstand solvents																	
Low melting point	Melting point	High melting point																	
	(b)	<p>Able to state two common characteristics of thermosets</p> <ol style="list-style-type: none"> has cross linkage / do not slide easily over one another heat resistant cannot be repeatedly melted 	2	2															
		<p>Able to construct the initial concept of thermosets</p> <ol style="list-style-type: none"> A polymer that has cross linkage and heat resistant is thermosets 	1	1															
		<p>Able to give another example of thermosets and non - example of thermoplastics</p> <p>Another example</p> <ol style="list-style-type: none"> polyester resins / epoxy <p>Non - example</p> <ol style="list-style-type: none"> polythene polypropene Perspex PVC polystyrene 	1 1	2															
		Able to construct the actual concept																	

		1. A thermoset is a polymer that has cross linkages and heat resistant .	1	1
			Total	10