PERSIDANGAN KEBANGSAAN PENGETUA
SEKOLAH MENENGAH MALAYSIA
CAWANGAN TERENGGANU
DENGAN KERJASAMA
JABATAN PELAJARAN TERENGGANU

PEPERIKSAAN AKHIR TAHUN 2007

TINGKATAN EMPAT

SCIENCE

FORM 4

MARKING SCHEME

PAPER 1

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

Total mark for Paper 1 : 50 marks

PAPER 2

SECTION A

1	(a)	104°C	1 m
	(b)	(i) Type of substance/substances (*Jenis bahan/bahan*)	1 m
		(ii) Boiling point/thermometer reading (*Takat didih//bacaan termometer*)	1 m
	(c)	The presence of common salt/impurities increases the boiling point of pure water *(Kehadiran garam biasa/bendasing meningkatkan takat didih air tulen)*	1 m
	(d)	Distilled water is a pure water/liquid with the boiling point of 100°C *(Air suling adalah air/cecair tulen yang mempunyai takat didih 100°C)*	1m
		Total	**5 m**
2	(a)	Copper rod can conduct electricity/copper rod is an electric conductor *(Rod kuprum boleh mengkonduksi elektrik/rod kuprum adalah konduktor elektrik)*	1 m
	(b)	The type of bulb//the number of dry cell *(Jenis mentol//bilangan sel kering)*	1 m
	(c)	Metal is a material that can conduct electricity/shows the bulb lights up *(Logam ialah sejenis bahan yang boleh mengkonduksi elektrik/ menyebabkan lampu menyala)*	1m
	(d)	The ammeter needle will deflect *(Jarum ammeter akan terpesong)*	1m
	(e)	Can and medal *(tin dan medal)*	1m
		Total	**5 m**
3	(a)	The volume of gas (collected) *(Isipadu gas (terkumpul)*	1 m
	(b)	4-5 points are transferred correctly	1 m
		Smooth graph	1 m
	(c)	The volume of gas given off is directly proportional to the reaction time/ the longer the reaction time, the higher the volume of gas *(Isipadu gas yang terbebas berkadar terus dengan masa tindakbalas/semakin bertambah masa semakin tinggi isipadu gas)*	1 m
	(d)	$43cm^3$	1 m
		Total	**5 m**

4	(a)	Real//inverted//smaller than object *(Nyata//songsang//lebih kecil daripada object)*	1 m
	(b)	2.5± 0.1 cm	1 m
	(c)	K2	1 m
	(d)	The thinner the lens the longer the image distance *(Semakin nipis kanta semakin panjang jarak fokus)*	1 m
	(e)	Image distance *(Jarak imej)*	1 m
			Total 5 m
5	(a)	(i) Reflex action *(Tindakan refleks)*	1 m
		(ii) Controlled by spinal cord *(Dikawal oleh saraf tunjang)*	1 m
	(b)	(i) Synapse	1 m
		(ii) Sensory neurone *(neuron deria)*	1 m
	(c)	Knee jerk//withdraw hand when accidentally touched hot object *(Sentakan lutut//mengalih tangan bila tersentuh benda panas)*	1 m
			Total 5 m
		Total marks for Section A	**20 marks**

SECTION B

6	(a)	Q : Boy/male *(lelaki)* R : Boy/male *(lelaki)*	2m
	(b)	Fertilization *(Persenyawaan)*	1 m
	(c)	(i) Identical twins *(Kembar seiras)*	1 m
		(ii) One ovum is fertilized by one sperm (to form one zygote)// the zygote formed splits into two *(Satu ovum disenyawakan oleh satu sperma (dan membentuk satu zigot)//* *Zigot yang terbentuk membahagi dua)*	1m
	(d)	Siamese twins is formed *(Kembar Siam terbentuk)*	1 m
		Total	**6 m**
7	(a)	X : Alpha ray Y : Beta ray Z : Gamma ray	3 m
	(b)	Store in a thick lead container *(Simpan di dalam bekas plumbum tebal)*	1 m
	(c)	Gamma ray	1 m
	(d)	It has the highest penetration power *(mempunyai kuasa penembusan paling tinggi)*	1 m
		Total	**6 m**
8	(a)	K : Magenta L : Blue	2 m
	(b)	(i) Blue	1 m
		(ii) Magenta	1 m
	(c)	White light *(Cahaya putih)*	1 m
	(d)	Gangsa, keluli/ contoh yang sesuai	1 m
	(e)	Black/no light *(Hitam/tiada cahaya)*	1 m
		Total	**6 m**
9	(a)	(i) P : Carbon (ii) Q : Iron	2 m
	(b)	Foreign atoms/P/carbon prevents the atoms of pure metal from sliding over one another	1 m

(atom asing/P/karbon rmenghalang atom- atom logam utama(kuprum) daripada menggelonggsor

(c) Harder// stronger//resistant to corrosion (any two) 2 m
(Lebih keras//lebih kuat//tahan kakisan)

(d) Brass //Pewter//Bronze *(Loyang//pewter//gangsa)* 1 m

Total 6 m

Total marks for Section B 30 marks

SECTION C

10 (a) Reaction of reactive metals with acid produce a higher volume of gas/ the more reactive the metal the higher the volume of gas produced 1 m
(Semakin reaktif logam semakin tinggi isipadu gas terbebas)

(b) (i) To study the reactivity of metals with acid 1 m
(Mengkaji kereaktifan tindakbalas logam dengan asid)

(ii) Manipulated variable: type of metal *(Jenis logam)*
Responding variable: volume of gas collected *(isipadu gas terkumpul)*
Controlled variable: concentration of dilute sulphuric acid *(kepekatan asid sulfurik)*
(any two) 2 m

(iii) boiling tube, cork stopper, delivery tube, glass trough, water, magnesium powder, zinc powder, copper powder dilute sulphuric acid and **test tube**. 1 m

(iv) 1. 5 cm^3 of dilute sulphuric acid is poured into a boiling tube.
(5 cm^3 asid sulfurik dituang ke dalam tabung didih)
2. A spatula of magnesium powder is added into the boiling tube.
(Satu spatula serbuk magnesium ditambah ke dalam tabung didih tersebut)
3. The gas released is collected in a test tube.
(Gas yang terbebas dikumpul di dalam tabung uji)
4. Steps 1-3 is repeated using zinc and copper powder.
(Langkah 1-3 diulang menggunakan serbuk zink dan kuprum)
5. The volume of gas collected is recorded in a table.
(Isipadu gas yang terkumpul direkodkan dalam jadual)
(any four) 4 m

(v) Tabulation of data

Type of metal	Volume of gas (cm^3)
Magnesium	
Zinc	
Copper	

1m

Total 10 m

11 (a)

Continuous variation	**Discontinuous variation**
Does not show obvious differences in characteristics / *Tidak menunjukkan perbezaan sifat tidak jelas*	Shows obvious differences in characteristics / *Menunjukkan perbezaan sifat yang jelas*
Influenced by environmental factors / *Dipengaruhi oleh faktor persekitaran*	Influenced by genetic factors / *Dipengaruhi oleh faktor genetik*
Not inherited / *Tidak diwarisi*	Inherited / *Diwarisi*
Form a normal distribution graph / *Membentuk graf taburan normal*	Does not form a normal distribution graph/ *Tidak membentuk graf taburan normal*

4 m

(b)

- Two common characteristics:
  - ❖ Shows obvious differences in characteristics **1 m**
    (Menunjukkan perbezaan sifat yang jelas)
  - ❖ Influenced by genetic factors **1 m**
    (Dipengaruhi oleh faktor genetik)

- Initial concept:

Variation that shows obvious differences in characteristics and influenced by genetic factors is discontinuous variation. **1 m**
(Variasi yang menunjukkan perbezaan sifat yang jelas dan dipengaruhi oleh faktor genetik ialah variasi tak selanjar)

- Another example : Fingerprint // type of hair *(cap jari//jenis rambut)* **1 m**

- Non-example : Height // weight (Berat badan//ketinggian) **1 m**

- Actual concept:

A discontinuous variation is a variation that shows obvious differences in characteristics and is influenced by genetic factors. **1 m**
(Variasi tak selanjar ialah variasi yang menunjukkan perbezaan sifat yang jelas dan dipengaruhi oleh faktor genetik)

Total **10 m**

11 (a) Methods of purification

(i) Filtration *(Penurasan)*
(ii) Crystallisation *(Penghabluran)*
(iii) Distillation *(Penyulingan)* **3 m**

- Filtration is a process of separation solid from liquid
  (Penurasan ialah proses pengasingan pepejal daripada cecair)
- Crystallisation is the process of forming crystals from a liquid or gas
  (Penghabluran ialah proses pembentukan hablur daripada cecair atau gas)
- Distillation is a process to obtain a pure liquid from a solution of liquid mixture
  (Penyulingan ialah proses menghasilkan cecair tulen daripada larutan bercampur)

Any one correct answer **1 m**

(a) Problem statement : The salt dissolve in the water (to form salt solution). **1m**

Name of the method used : Distillation **1 m**

Steps of the method used

- Salt solution is heated
- The required solution boils and turns into vapour
- The thermometer measures the temperature of the vapour
- The vapour is then cooled in the condenser
- When the vapour cools down, it condences into pure liquid

Any 4 correct answer **4 m**

Total **10 m**

Total marks for Section C **20 marks**

Jumlah keseluruhan **120 markah**
Jadikan 100%

END OF MARKING SCHEME