BAB 5

Termokimia
Thermochemistry

GERAK KERJA 35 Tarikh: _____ Masa: _____

Tindak Balas Endotermik dan Eksotermik

Isi tempat kosong dengan perkataan yang diberi. SP5.1.1 TP2
Fill in the blanks with the words provided.

Bahan tindak balas *Reactants*	Dibebaskan *Released*	Sejuk *Cold*
Diserap *Absorbed*	Tindak balas endotermik *Endothermic reaction*	Termometer *Thermometer*
Tindak balas eksotermik *Exothermic reaction*	Panas *Hot*	Hasil tindak balas *Product of the reaction*

(a) Tindak balas kimia adalah proses yang melibatkan tindak balas yang berlaku antara _____ untuk menghasilkan _____.
A chemical reaction is a process that involves reactions between the _____ to form _____

(b) Semasa tindak balas kimia, haba boleh _____ atau _____.
When a reaction happens, heat may be _____ or _____.

(c) Jika haba dibebaskan, persekitaran tindak balas akan menjadi _____.
If heat is released, the mixture of the reaction will become _____.

(d) Jika haba diserap, persekitaran tindak balas akan menjadi _____.
If heat is absorbed, the mixture of the reaction will become _____

(e) Tindak balas kimia yang membebaskan haba ke persekitaran dikenali sebagai _____.
A chemical reaction that releases heat to the surrounding is called an _____.

(f) Tindak balas kimia yang menyerap haba dari persekitaran dikenali sebagai _____.
A chemical reaction that absorbs heat to the surrounding is called an _____.

(g) _____ boleh digunakan untuk mengenal pasti tindak balas endotermik dan tindak balas eksotermik.
A _____ can be used to determine endothermic and exothermic reactions.

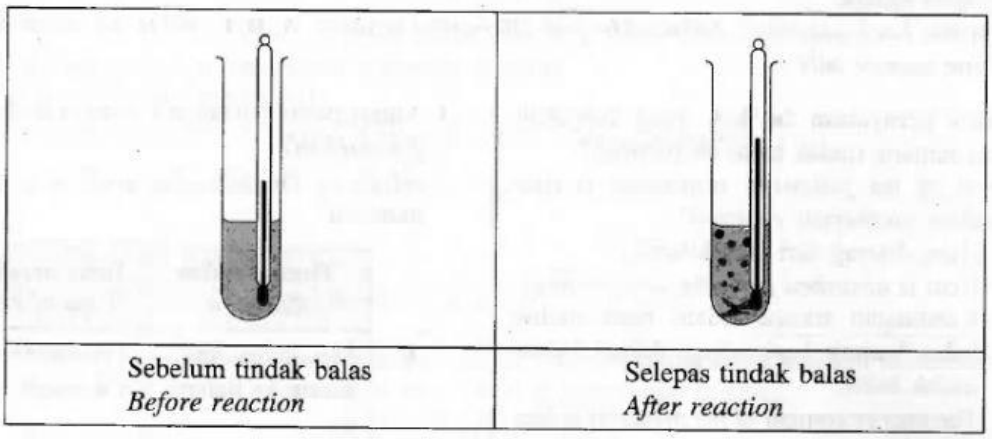
LIVEWORKSHEETS

BAHAGIAN B

1 Rajah di bawah menunjukkan bacaan suatu termometer. Lengkapkan ayat-ayat berikut dengan menggunakan perkataan-perkataan yang diberi dalam petak di bawah.
The diagram below shows the reading of a thermometer. Complete the following sentences using the words given in the box below.

meningkat *increases*	endotermik *endothermic*	eksotermik *exothermic*	menurun *decreases*

(a)

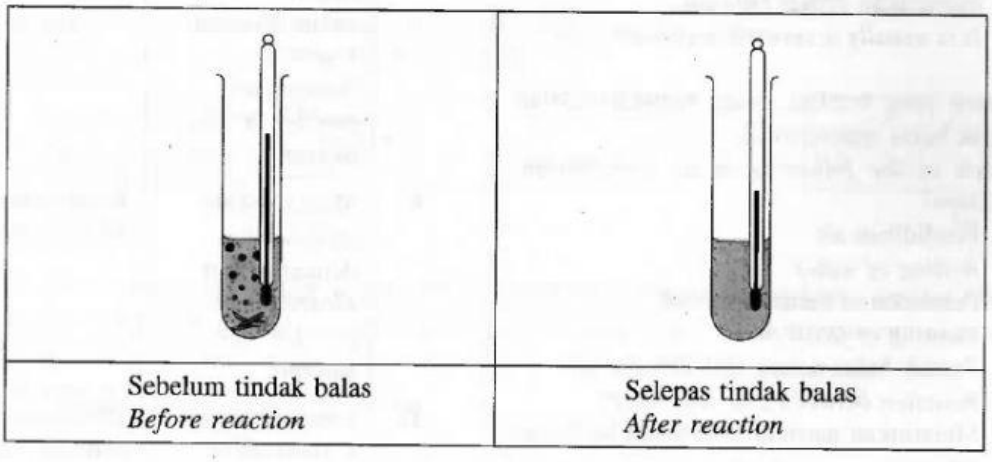


Dalam tindak balas _____, bacaan termometer akan _____.

In the _____ *reaction, the reading of the thermometer will* _____.

[2 markah]
[2 *marks*]

(b)



Dalam tindak balas _____, bacaan termometer akan _____.

In the _____ *reaction, the reading of the thermometer will* _____.

[2 markah]
[2 *marks*]

LIVEWORKSHEETS

PT3-Oriented Practice 5

Section A

1. What is the name of the chemical reaction in which heat is absorbed?
Apakah nama tindak balas kimia di mana haba diserap?
   A exothermic reaction *tindak balas eksotermik*
   B endothermic reaction *tindak balas endotermik*
   C reversible reaction *tindak balas berbalik*
   D substitutive reaction *tindak balas gantian*

2. Which of the following is the reaction involved in the photosynthesis?
Antara yang berikut, tindak balas manakah yang terlibat dalam fotosintesis?
   A condensation reaction *tindak balas kondensasi*
   B exothermic reaction *tindak balas eksotermik*
   C reversible reaction *tindak balas berbalik*
   D endothermic reaction *tindak balas endotermik*

3. What is the reaction involved when cooking food?
Apakah tidak balas yang terlibat apabila memasak makanan?
   A condensation reaction *tindak balas kondensasi*
   B exothermic reaction *tindak balas eksotermik*
   C reversible reaction *tindak balas berbalik*
   D endothermic reaction *tindak balas endotermik*

4. What is the final energy content of products in an exothermic reactions?
Apakah kandungan tenaga akhir produk bagi tindak balas eksotermik?
   A is lower than the energy contents of the reactants *adalah lebih rendah daripada kandungan tenaga bahan tindak balas*
   B is higher than the energy contents of the reactants *adalah lebih tinggi daripada kandungan tenaga bahan tindak balas*
   C does not depend upon the energy content of the reactants *tidak bergantung kepada kandungan tenaga bahan tindak balas*
   D forms highly stable compounds *membentuk sebatian yang sangat stabil*

5. Diagram 1 shows the setup of an experiment. Which of the following reactions are involved in processes X and Y?
Rajah 1 menunjukkan susunan satu eksperimen. Antara tindak balas berikut yang manakah yang terlibat dalam proses X dan Y?

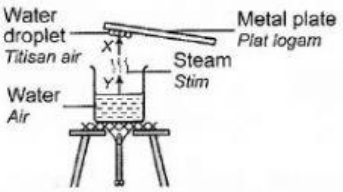


Diagram 1 / *Rajah 1*

	Process X *Proses X*	Process Y *Proses Y*
A	Endothermic *Endotermik*	Exothermic *Eksotermik*
B	Endothermic *Endotermik*	Endothermic *Endotermik*
C	Exothermic *Eksotermik*	Endothermic *Endotermik*
D	Exothermic *Eksotermik*	Exothermic *Eksotermik*

6. Diagram 2 shows dissolving ammonium chloride in water.
Rajah 2 menunjukkan proses melarutkan ammonia klorida dalam air.

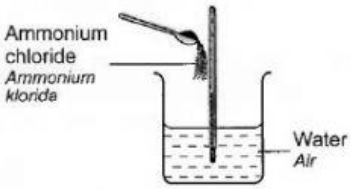


Diagram 2 / *Rajah 2*

State the types of energy changes that occur in the chemical reaction.
Nyatakan jenis perubahan tenaga yang berlaku dalam tindak balas kimia itu.

	Chemical reaction *Tindak balas kimia*	Energy changes *Perubahan tenaga*
A	Heat is absorbed from the surrounding *Haba diserap dari persekitaran*	Endothermic *Endotermik*
B	Heat is released into surroundings *Haba dibebaskan ke persekitaran*	Endothermic *Endotermik*
C	Heat is absorbed from surroundings *Haba diserap dari persekitaran*	Exothermic *Eksotermik*
D	Heat is released into surroundings *Haba dibebaskan ke persekitaran*	Exothermic *Eksotermik*

© Penerbitan Pelangi Sdn. Bhd.

LIVEWORKSHEETS

PRAKTIS 5

Termokimia

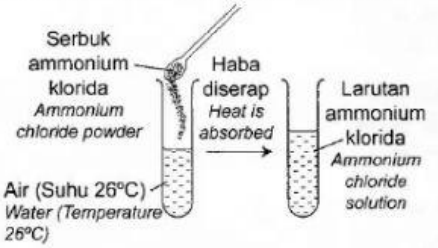
PT3

BAHAGIAN A

1. Antara yang berikut, yang manakah ciri tindak balas eksotermik?
Which of the following is the characteristic of an exothermic reaction?
   A Haba diserap dari persekitaran.
   Heat is absorbed from the surrounding.
   B Suhu persekitaran meningkat.
   The surrounding temperature increases.
   C Bekas tindak balas menjadi sejuk.
   The container of the reaction becomes cold.
   D Bacaan suhu termometer menurun.
   Thermometer reading decreases.

2. Pernyataan yang manakah menerangkan tindak balas endotermik?
Which statement describes an endothermic reaction?
   A Tenaga haba dibebaskan.
   Heat energy is released.
   B Semua tindak balas adalah berbalik.
   All reactions are reversible.
   C Bacaan termometer menurun.
   Thermometer reading decreases.
   D Persekitaran mencapai suhu maksimum.
   The surrounding reaches the maximum temperature.

3. Rajah di bawah menunjukkan satu tindak balas kimia.
The diagram below shows a chemical reaction.



Apakah kemungkinan suhu larutan ammonium klorida itu?
What is the possible temperature of the ammonium chloride solution?
   A 20°C
   B 26°C
   C 30°C
   D 35°C

4. Apakah kemungkinan suhu larutan yang terbentuk apabila hablur natrium hidroksida dilarutkan dalam air dengan suhu 26°C?
What is the possible temperature of the solution formed when pellets of sodium hydroxide are dissolved in water with the temperature of 26°C?
   A 20°C **C** 26°C
   B 25°C **D** 36°C

5. Antara yang berikut, yang manakah contoh tindak balas eksotermik dalam kehidupan harian?
Which of the following is an example of exothermic reaction in everyday life?
   A Penyejatan air
   Evaporation of water
   B Kondensasi
   Condensation
   C Pendidihan
   Boiling
   D Fotosintesis
   Photosynthesis

6. Antara yang berikut, yang manakah contoh tindak balas endotermik dalam kehidupan harian?
Which of the following is an example of endothermic reaction in everyday life?
   A Letupan bom
   Bomb explosion
   B Respirasi
   Respiration
   C Pembekuan
   Freezing
   D Fotosintesis
   Photosynthesis

7. Apakah tindak balas yang menyerap haba daripada sekeliling?
What is the reaction that absorbs heat from the surrounding?
   A Tindak balas pengoksidaan
   Oxidation reaction
   B Tindak balas endotermik
   Endothermic reaction
   C Tindak balas eksotermik
   Exothermic reaction
   D Tindak balas penurunan
   Reduction reaction

© Penerbitan Pelangi Sdn. Bhd.

LIVEWORKSHEETS