

Bahagian A

9.1 Sistem dan Struktur Bumi
The System and Structure of Earth

- 1 Pernyataan berikut adalah mengenai salah satu komponen dalam sistem Bumi.
The following statement is about one of the components of the Earth system.

Zon batu dan tanah di permukaan Bumi
A zone of rocks and soil on the Earth's surface

Apakah komponen tersebut?

What is the component?

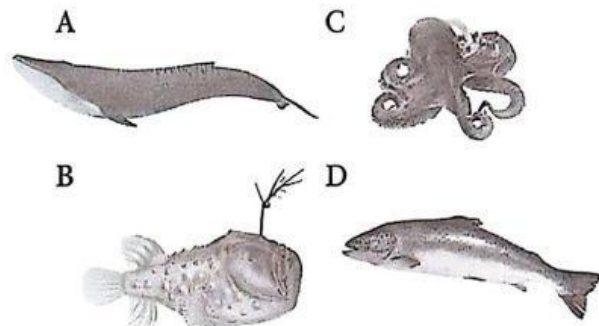
- A Hidrosfera *Hydrosphere*
B Geosfera *Geosphere*
C Atmosfera *Atmosphere*
D Biosfera *Biosphere*
- 2 Rajah berikut menunjukkan aurora yang berlaku di salah satu lapisan atmosfera.
The following diagram shows the aurora that occurs in one of the layers of the atmosphere.



Pada lapisan atmosfera yang manakah aurora berlaku?

At which layer of the atmosphere do auroras occur?

- A Eksosfera *Exosphere*
B Termosfera *Thermosphere*
C Mesosfera *Mesosphere*
D Stratosfera *Stratosphere*
- 3 Lautan dibahagikan kepada zon-zon yang berbeza. Antara berikut, haiwan manakah yang boleh ditemui di zon tengah malam?
The ocean is divided into different zones. Which of the following animals can be found in the midnight zone?



9.2 Bahan Bumi
Composition of the Earth

- 4 Apakah satu ciri batuan igneus?
What is a feature of an igneous rock?
- A Mengandungi pelbagai mineral
Contains various minerals
B Mengandungi fosil *Contains fossils*
C Lebih keras daripada batuan asal
Harder than the original rock
D Mempunyai permukaan yang berongga
Has surfaces with cavities
- 5 Batuan P terbentuk daripada mampatan bahan-bahan enapan yang dibawa oleh sungai, glasier dan angin. Apakah batuan P?
Rock P is formed from the compression of sedimentary materials brought by rivers, glaciers and wind. What is rock P?
- A Batuan igneus *Igneous rock*
B Batuan sedimen *Sedimentary rock*
C Batuan fosil *Fossil rock*
D Batuan metamorfik *Metamorphic rock*
- 6 Mengapakah batuan metamorfik lebih keras daripada batuan igneus dan batuan sedimen?
Why are metamorphic rocks harder than igneous and sedimentary rocks?
- A Mengandungi banyak bahan mineral
Contains many minerals
B Mempunyai rongga *Have cavities*
C Terbentuk daripada proses pembentukan magma
Formed from the formation of magma

- D Terbentuk akibat tekanan dan suhu yang sangat tinggi
Formed as a result of very high pressure and temperature

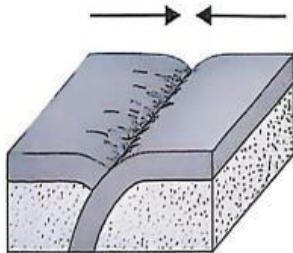
9.3 Proses Utama Bumi Main Processes of the Earth

- 7 Permukaan Bumi terbentuk melalui dua proses iaitu proses eksogen dan proses endogen. Antara berikut, yang manakah merupakan contoh proses eksogen?

The Earth's surface is formed through two processes, the exogenic process and the endogenic process. Which of the following are examples of exogenic processes?

- | | |
|--|-----------------------------------|
| I Hakisan <i>Erosion</i> | |
| II Angkutan dan pengendapan
<i>Transport and sedimentation</i> | |
| III Aktiviti magma <i>Magma activity</i> | |
| IV Pergerakan plat tektonik Bumi
<i>Earth's crust movements</i> | |
| A I dan II
<i>I and II</i> | C I dan III
<i>I and III</i> |
| B II dan III
<i>II and III</i> | D III dan IV
<i>III and IV</i> |

- 8 Rajah berikut menunjukkan proses pergerakan kerak Bumi.
The following diagram shows the Earth's crust movement.



Apakah kesan daripada proses itu terhadap permukaan Bumi?

What is the effect of the process on the Earth's surface?

- | |
|---|
| A Tanah runtuh <i>Landslides</i> |
| B Batu dan tanah akan terhakis sedikit demi sedikit
<i>Rocks and soil will be eroded little by little</i> |
| C Menghasilkan pelbagai bentuk muka bumi dan hanyutan benua
<i>Produces various landforms and continental drifts</i> |

- D Menghasilkan arus perolakan di lapisan astenosfera
Produces convection currents in the asthenospheric layer

9.4 Fenomena Geobencana Geohazard Phenomena

- 9 Rajah berikut menunjukkan salah satu contoh fenomena geobencana.
The following diagram shows one example of a geohazard phenomenon.



Apakah kejadian geobencana yang ditunjukkan tersebut?

What is the geohazard event shown?

- | |
|---------------------------------|
| A Lubang benam <i>Sinkhole</i> |
| B Vulkanisme <i>Volcanism</i> |
| C Tsunami <i>Tsunami</i> |
| D Tanah runtuh <i>Landslide</i> |

- 10 Apakah kejadian geobencana yang sering berlaku di kawasan perindustrian?
What are the geohazard events that often occur in industrial areas?

- | |
|-----------------------------------|
| A Tsunami <i>Tsunami</i> |
| B Tanah jerlus <i>Quicksand</i> |
| C Banjir kilat <i>Flash flood</i> |
| D Hujan asid <i>Acid rain</i> |

9.5 Usia Bumi Age of Earth

- 11 Bumi dianggarkan berumur 4.5 bilion tahun. Antara hidupan berikut, yang manakah wujud 500 juta tahun dahulu?

The age of Earth is estimated to be 4.5 billion years. Which of the following organisms existed 500 million years ago?

- | |
|------------------------------|
| A Protozoa <i>Protozoa</i> |
| B Rumpai laut <i>Seaweed</i> |
| C Ikan <i>Fish</i> |
| D Bakteria <i>Bacteria</i> |

- 12 Apakah kepentingan fosil kepada perkembangan sains?
What is the importance of fossils to the development of science?

- A Meningkatkan pengetahuan sains dalam bidang biologi
Improve scientific knowledge in the field of biology
- B Mendorong penemuan habitat manusia purba
Encourage the discovery of ancient human habitats
- C Meningkatkan pendapatan dan ekonomi negara
Increase national income and economy
- D Memberikan maklumat tentang spesies yang telah hilang dari Bumi
Provide information on species that have disappeared from the Earth

9.6 Sumber Bumi dan Geologi Gunaan *Earth's Resources and Applied Geology*

- 13 Rajah menunjukkan salah satu contoh mineral ekonomi.
The diagram shows an example of an economic mineral.



Apakah jenis mineral ekonomi yang ditunjukkan tersebut?

What is the type of economic minerals shown?

- A Mineral logam
Metallic minerals
 - B Mineral bukan logam
Non-metallic minerals
 - C Mineral nadir
Rare minerals
 - D Mineral separuh logam
Semi-metallic minerals
- 14 Apakah faktor-faktor yang membantu proses pembentukan arang batu?
What are the factors that help the coal formation process?
- I Tekanan tinggi
High pressure
 - II Suhu yang rendah
Low temperature

- III Suhu yang tinggi
High temperature
 - IV Tempoh masa yang singkat
A short period of time
- | | |
|---------------------------------|-----------------------------------|
| A I dan II
<i>I and II</i> | C II dan III
<i>II and III</i> |
| B I dan III
<i>I and III</i> | D III dan IV
<i>III and IV</i> |

- 15 Apakah yang dimaksudkan dengan proses hidroterma?

What is meant by the hydrothermal process?

- A Air yang dipanaskan oleh haba daripada Bumi secara semula jadi
Water naturally heated by the heat from the Earth
- B Proses menghasilkan tenaga elektrik daripada stim panas
The process of generating electricity from hot steam
- C Air bawah tanah yang dipanaskan oleh cahaya matahari
Groundwater heated by sunlight
- D Kenaikan suhu air laut disebabkan oleh cahaya matahari
The increase in seawater temperature is caused by sunlight

- 16 Rajah berikut menunjukkan sisa bahan kimia di tapak pelupusan sampah.

The following diagram shows the chemical waste at a landfill.



Apakah kesan aktiviti tersebut?

What is the effect of the activity?

- A Jerebu
Haze
- B Banjir kilat
Flash flood
- C Pencemaran air bawah tanah
Groundwater pollution
- D Kemarau
Drought