

**SULIT**  
**6355/2**  
**English**  
**For Science**  
**And**  
**Technology**  
**KERTAS 2**  
**NOVEMBER**  
**2004**  
**1 JAM**

**PERSIDANGAN KEBANGSAAN PENGETUA**  
**SEKOLAH MENENGAH MALAYSIA**  
**CAWANGAN TERENGGANU**  
**DENGAN KERJASAMA**  
**JABATAN PENDIDIKAN NEGERI**

**6355/2**

**PEPERIKSAAN AKHIR TAHUN 2004**  
**TINGKATAN EMPAT**

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**ENGLISH FOR SCIENCE AND TECHNOLOGY**  
**KERTAS 2**

**Satu jam**

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**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU**

**Arahan**

1. *Kertas soalan ini mengandungi dua bahagian dan 30 soalan.*
2. *Jawab semua soalan.*
3. *Hitamkan semua jawapan anda untuk bahagian A dan B di kertas jawapan yang disediakan.*
4. *Setiap soalan akan mempunyai 3 atau 4 pilihan; A, B dan C ATAU A, B, C dan D*

**Instructions**

1. *This question paper consists of two sections and 30 questions.*
2. *Answer all questions..*
3. *Shade all your answers for Sections A and B on the answer sheet provided.*
4. *Each question will consist of either 3 or 4 options; A, B and C OR A, B, C and D.*

**Kertas soalan ini mengandungi 11 halaman bercetak.**

**Section A****[25 marks]**

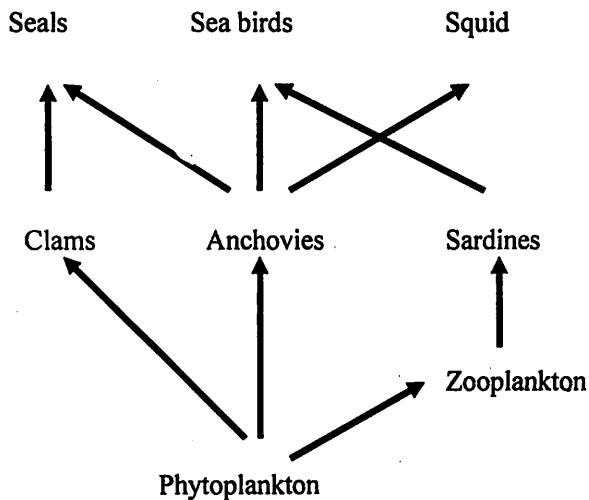
You are advised to spend 40 minutes on this section.

**Questions 1 – 25**

For each of the questions in this section, circle the answer A, B, C or D in the answer sheet provided.

**Question 1**

Study the diagram below and answer the following question.



- 1 In the food web above,
- A seals eat clams and anchovies.
  - B sardines are eaten by zooplankton.
  - C phytoplankton is eaten by seals, seabirds and squid.
  - D seabirds eat sardines, zooplankton and phytoplankton.

**Question 2**

Study the table below and answer the question that follows.

**Wind Power Classes in Electricity Production**

Wind Power Class	Wind Power Density (Watts/m <sup>2</sup> )	Speed (m/s)
1	< 200	< 5.6
2	200 - 300	5.6 - 6.4
3	300 - 400	6.4 - 7.0
4	400 - 500	7.0 - 7.5
5	500 - 600	7.5 - 8.0
6	600 - 800	8.0 - 8.8
7	> 800	> 8.8

- 2 Which of the following statements is true?
- A The higher the speed of wind, the lower the wind power density.
  - B Wind speed of less than 5.6 m/s produces high wind power density.
  - C Wind power density of 200 watts/m<sup>2</sup> is classified as wind power class 1.
  - D Wind power density of more than 800 watts/m<sup>2</sup> is the highest wind power class.

### Questions 3 – 4

Read the article below and answer the questions that follow.

Electronic ID for pets offers a number of physical advantages over external tags. It is remarkably more reliable. The process is quick and painless, similar to receiving a vaccination. The chip is permanent and cannot get lost. The pet's identification number is unique in the world and the database can contain the pet's pertinent history. Cats, unlikely to carry visible ID and always in danger of being picked up and transported to shelters can benefit immensely from this technology.

- 3 Which of the following is **NOT** an advantage of electronic ID over external tags?
- A It is more reliable.
  - B It also serves as a vaccine.
  - C The process does not cause pain.
  - D No two pets in the world have the same identification numbers.
- 4 How can cats benefit from electronic ID?
- A They can move freely.
  - B They will know their way home.
  - C They will not be in danger of being picked up.
  - D They can easily be identified if they are transported to shelters.

### Question 5

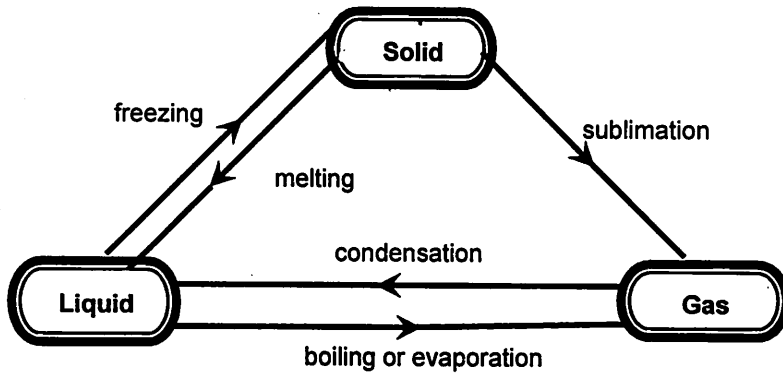
Read the article below and answer the question that follows.

The amount of energy contained in food may be determined by measuring the heat that is released as the food is burned. Foods that are higher in energy will give off more heat when their stored energy is released by burning. For example, if you could burn a gram of fat and a gram of carbohydrates, the fat would give off more heat. This is because the chemical structure of fat allows it to contain more stored energy than carbohydrates.

- 5 Why does fat release more energy than carbohydrate when burned?
- A Fat is heavier than carbohydrate.
  - B The chemical structure of fat is more complex.
  - C Carbohydrate contains less stored energy than fat.

**Question 6**

Study the diagram below and answer the question that follows.



**Changes in states of matter**

- 6 Which of the following statements is **NOT TRUE** regarding changes in states of matter?
- A A liquid condenses to become a gas.
  - B A liquid changes to a solid when it freezes.
  - C The process of a solid changing to a liquid is called melting.
  - D The process of a solid changing to a gas is called sublimation.

**Question 7**

Study the table below then answer the question that follows.

	Structure	% in atmosphere	Importance
<b>Nitrogen</b>	Each molecule consists of two nitrogen atoms	78	- to form nitrogen compounds - to manufacture fertilisers
<b>Oxygen</b>	A neutral gas. Its molecules have two oxygen atoms	21	- cell-respiration - combustion - to solder metals
<b>Carbon Dioxide</b>	Each molecule has one atom of carbon and two atoms of oxygen	0.03	- photosynthesis - food industries

- 7 Which of the following statements is **NOT** correct about the three gases.
- A All the three gases exist in the form of molecules.
  - B More than  $\frac{3}{4}$  of the air in the atmosphere is nitrogen.
  - C Carbon dioxide is important for plants to produce food.
  - D Animals and human beings need oxygen for expiration.

**Question 8**

Read the text below and then answer the question that follows.

You can't see them with the naked eye, but earthworms have tiny bristles on their bodies. These bristles grip whatever surface the worm is in contact with, such as the ground or walls or tunnel. Earthworms travel through underground tunnels or move about on different surfaces by using these bristles to anchor themselves as they push forward or backward using strong muscles.

- 8 Earthworms move by
- A pushing the bristles on their bodies forward and backward.
  - B pushing the bristles and their bodies using the strong muscles.
  - C pushing forward and backward while the strong muscles grip the surfaces.
  - D pushing themselves forward or backward while the bristles grip the surfaces.

**Questions 9 and 10**

*Read the text below and then answer the questions that follow.*

Minerals are solid, inorganic (not living) substances that are found on and under the surface of the earth. Most are chemical compounds, which means they are made up of two or more elements. For example, the mineral sapphire is made up of aluminum and oxygen. A few minerals, such as gold, silver and copper, are made from a single element.

Minerals are considered the building blocks of rocks. Rocks can be a combination of as many as six minerals.

Many minerals, such as gold and silver are very valuable because they are beautiful and rare. Limestone and quartz are other examples of minerals.

- 9 The following could be minerals **EXCEPT**
- A rocks
  - B blocks
  - C single elements
  - D chemical compounds
- 10 What do you learn about minerals from the above text?
- A Minerals are solid organic substances.
  - B Sapphire is made up from a single element.
  - C A few minerals may combine to form rocks.
  - D Minerals can be found on the surface of the earth only.

**Question 11**

*Read the text below and then answer the question that follows.*

Cats, as well as some other animals, have specialised cells in their eyes called the tapetum lucidum. These cells are in a layer at the back of the retina and act like a mirror to enhance what light there is. This is what causes their eyes to glow.

- 11 The \_\_\_\_\_ causes the eyes of a cat to glow.
- A cells
  - B retina
  - C mirror

**Question 12**

Read the description on Mars and then answer the question that follows.

**Mars**

- also known as the Red Planet because of its rusty red appearance
- situated over 200 million km from Earth
- takes 687 Earth days to complete its orbit round the sun
- its summer temperature can be as high as 27° C but winter temperature can be as low as -133° C
- its atmosphere is mostly made up of Carbon dioxide; only a miniscule 0.13 % of it is Oxygen
- has two moons

- 12 One of the factors which makes Mars an unsuitable place to live on is its
- A appearance
  - B atmosphere
  - C orbit round the sun
  - D distance from the earth

**Question 13**

Read the text below and then answer the question that follows.

Xenograft is the process of transplanting tissues taken from animals to man. Then, there is autograft where tissues are taken from one part and transplanted to another part of our own body. Allograft is the process of transplanting tissues from one human to another. Thus, it is very crucial to pledge organ donation as the above processes are only made possible when there are ready donors. Parents who have lost a child can help another child to survive by donating their child's organs.

- 13 Which of the following statements is true according to the text above?
- A In autograft, tissues are transplanted from a donor to a recipient.
  - B Xenograft involves transplanting human tissues to animals.
  - C In organ transplant, the process involved is called allograft.

**Questions 14 and 15**

Read the text below and answer the questions that follow.

A large number of children die each year from lack of Vitamin A. Deficiency in Vitamin A has also led to blindness in thousands of other children. Millions of children also suffer from conditions ranging from night blindness, dryness of skin, weight loss and *impaired* senses of hearing, taste and smell – all due to a deficiency in Vitamin A. Food sources rich in this precious vitamin include liver, butter, milk and egg yolk.

- 14 Which of the following is NOT linked to deficiency in Vitamin A?
- A Eye problems
  - B Skin problems
  - C Weight problems
  - D Liver problems

- 15 The word "*impaired*" in the above extract means
- A spoiled
  - B injured
  - C damaged
  - D weakened

### Question 16

Read the text below and answer the question, that follows.

Coral reefs all over the world are being affected by global warming. The higher water temperatures are causing coral reefs to lose algae, which supplies the corals with food. When this happens, corals turn white, stop growing and die.

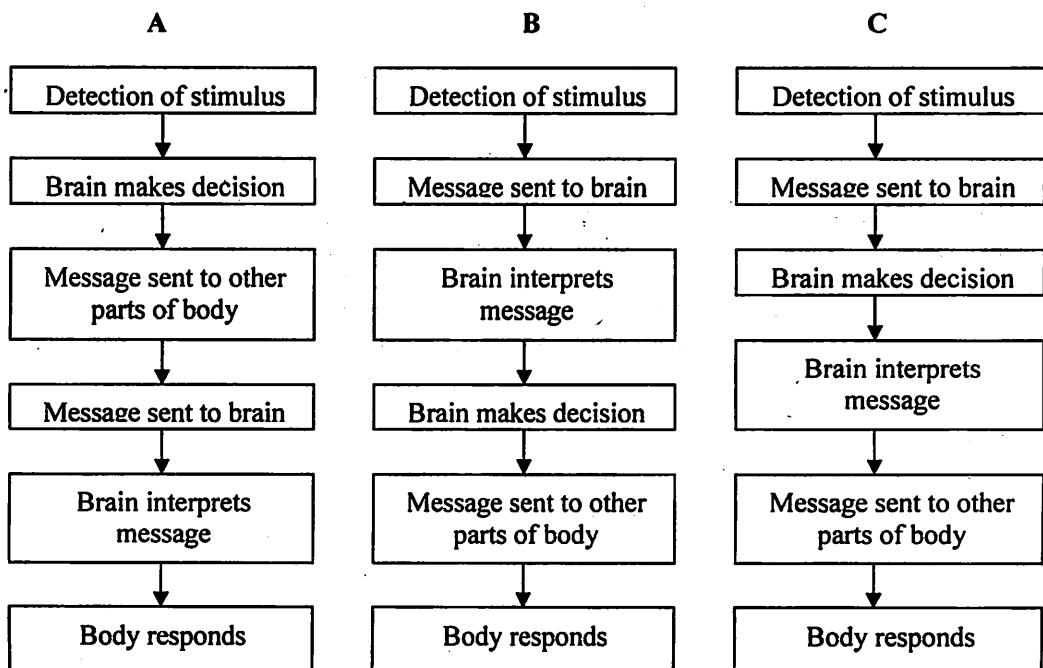
- 16 The corals die because
- A they stop growing
  - B they turn white
  - C they need food
  - D they lose algae

### Question 17

Read the text and answer the question that follows.

When the phone rings, the ringing sound (the stimulus) is detected by your ears which is a sensory organ. A message is sent to your brain through the nerves. Your brain interprets the received message by helping you to understand what is going on around you. Your brain then decides what should be done and sends another message to some other parts of the body through another set of nerves. Upon receiving the message from the brain, your body responds and you pick up the ringing phone.

- 17 Which of these show the correct sequence of a person's response to a stimulus?



**Question 18**

Study the table and answer the following question.

Carbon dioxide equivalent emissions: 2000		
Nation	Total Carbon dioxide equivalent emissions (000 tonnes)	Per capita emissions (tonnes)
United States	5,400,000	20.5
United Kingdom	540,000	9.2
China	3,100,000	2.5
India	900,000	1.0
Bangladesh	20,000	0.2
Mozambique	900	0.1

18 Which nations have relatively similar per capita emissions?

- A China and India
- B Bangladesh and China
- C Mozambique and Bangladesh
- D United States and United Kingdom

**Question 19**

Read the text and answer the question that follows.

There are many similarities between plant cells and animal cells. Each cell has a nucleus, cytoplasm, plasma membrane, mitochondrion, endoplasmic reticulum and Golgi bodies. Even though plant and animal cells have many similarities, they differ in certain aspects. Plant cells have cell walls and chloroplasts whereas animal cells do not. At the same time plant cells have a definite shape whereas animal cells do not.

19 Which of the following can differentiate a plant cell from an animal cell?

- A The presence of a nucleus.
- B The presence of chloroplasts
- C The absence of a plasma membrane.
- D The absence of Golgi bodies

**Question 20**

Read the text and answer the question that follows.

Nuclear energy is potential energy stored in the nucleus of an atom and is released during nuclear reactions. One kind of nuclear reaction occurs when a nucleus in an atom splits. This is termed as nuclear fission. Another kind of reaction called nuclear fusion occurs when the nucleus of two atoms fuse together. These two kinds of reactions release vast amounts of energy.

20 Which of the following is true about nuclear reactions?

- A Nuclear fission occurs when two atoms combine.
- B The splitting of atoms is called nuclear fusion.
- C Nuclear reactions unleash a lot of energy.



**Question 21**

Read the text below and answer the question that follows.

The largest organ in our body is our skin. It consists of three main layers – the epidermis which is the outermost layer, the dermis which is the middle layer, and subcutaneous fat which makes up the innermost layer. The skin plays a very important role in protecting the body from harmful substances like bacteria and UV rays.

- 21 Which of the following is true about our skin?
- A The skin prevents dangerous external elements from entering our body.
  - B The layer that is exposed to the external environment is the dermis.
  - C The layer of subcutaneous fat lies directly below the epidermis.
  - D Bacteria and UV rays can easily penetrate our skin.

**Questions 22 and 23**

Read the text below and answer the questions that follow.

In a reaction called fermentation, yeast converts sugar into alcohol and carbon dioxide. This reaction occurs in the making of wine and bread. When yeast is mixed with flour, water and sugar (the dough) in making bread, the yeast uses the sugar and in the process, produces carbon dioxide and alcohol. The carbon dioxide gas forms 'bubbles' in the dough, making the dough rise. Most of the alcohol evaporates when the dough is baked. This gives a very pleasant scent during baking.

- 22 During fermentation, yeast can produce
- A alcohol
  - B sugar and alcohol
  - C sugar and carbon dioxide
  - D carbon dioxide and alcohol
- 23 What gives a very nice smell while bread is baked?
- A The evaporation of alcohol.
  - B The release of carbon dioxide.
  - C The conversion of sugar into alcohol and carbon dioxide.
  - D The formation of bubbles in the dough, making the dough rise.

**Question 24**

Read the text below and answer the question that follows.

Dental applications of laser have been studied since lasers were first developed in the 1960s. Although they are more precise than conventional instruments, they have not completely replaced them. The other advantages are that dental laser minimises the pain of treating small cavities while helping to preserve more of the surrounding tooth. Lasers are more sensitive than the human eye in picking up tiny pits and fissure cavities.

- 24 The following statements are true of the dental laser **EXCEPT**
- A It is more sensitive than the eye
  - B Treatment using the dental laser is more painful
  - C It saves more of the problem tooth
  - D It is more precise

**Question 25**

*Read the following text and answer the question that follows.*

Smoking-related illnesses are the biggest killers in the world, causing heart attacks, cancers and bronchitis. Tobacco smoke contains thousands of chemicals. A few examples are nicotine, carbon monoxide and tar. Nicotine is a powerful and toxic substance. It stimulates the central nervous system but then reduces brain and nervous system activity. Scientists believe that lung cancer develops when cells become damaged by tobacco smoke. Twenty years may pass from the time a person starts smoking till the development of cancer.

- 25 Which of the following statements is true?
- A Nicotine stimulates brain and nervous system activity.
  - B A smoker may develop lung cancer after a long period of smoking.
  - C Lung cancer develops because the cells are stimulated by cigarette smoke.
  - D Tobacco smoke contains only three chemicals – nicotine, carbon monoxide and tar.

**Section B**  
[5 marks]

**Questions 26 – 30**

Read the following passage and then circle the **BEST** answer **A, B, C** or **D** in the answer sheet provided.

Diabetes is becoming an Asian 26, and its victims are younger than ever. What is behind this crisis?

To understand the underlying reasons there are several things we must know. But first, what is diabetes? It is an illness whereby the body cannot 27 the level of sugar in the blood. Insulin, a hormone produced by the pancreas 28 glucose to muscles and other tissues to provide energy. A diabetic, a person suffering from the illness, either fails to produce enough insulin or he cannot use his own insulin 29. The two main types of diabetes are known as Type 1 and Type 2.

Type 1 is sometimes called juvenile diabetes which occurs in people under the age of 30. On the other hand, Type 2 known as adult-onset diabetes usually 30 people over 30.

- 26    A    epidemic  
      B    epidermis  
      C    epididymis
- 27    A    steer  
      B    direct  
      C    control  
      D    command
- 28    A    transports  
      B    passes  
      C    gives
- 29    A    capably  
      B    actively  
      C    usefully  
      D    effectively
- 30    A    stings  
      B    strikes  
      C    attacks