

6355/2
English
for Science
and
Technology
Kertas 2
Ogos
2010
1 jam



BAHAGIAN PENGURUSAN
SEKOLAH BERASRAMA PENUH DAN SEKOLAH KLUSTER
KEMENTERIAN PELAJARAN MALAYSIA

PEPERIKSAAN PERCUBAAN
SIJIL PELAJARAN MALAYSIA 2010

ENGLISH FOR SCIENCE AND TECHNOLOGY
Kertas 2
Satu jam

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

Arahan

1. *Kertas soalan ini mengandungi 30 soalan.*
2. *Jawab semua soalan.*
3. *Tiap-tiap soalan diikuti oleh tiga atau empat pilihan jawapan.*
4. **Hitamkan** jawapan anda pada kertas jawapan objektif yang disediakan.

Instruction

1. *This question paper consists of 30 questions.*
2. *Answer all questions*
3. *Questions in this question paper may have three or four options*
4. **Shade** all your answers on the objective sheet provided

Kertas soalan ini mengandungi 15 halaman bercetak

SECTION A
(30 marks)

Questions 1 – 25 are based on the given stimuli. Study the information carefully and choose the best answer.

Medicines called antibiotics are used to treat many illnesses caused by bacteria. They either stop the bacteria from multiplying or destroy them completely. Antibiotics have no effect on illnesses caused by viruses, such as colds and flu.

- 1** What is the use of antibiotics?
- A** They treat colds and coughs.
 - B** They prevent many diseases.
 - C** They stop viruses from multiplying.
 - D** They kill bacteria that cause diseases.

The bright colouring of ladybirds, generally red or yellow with black spots, is thought to have a defensive function. It warns would-be predators, like insectivorous birds, that the beetles are distasteful. When disturbed or handled, most ladybirds discharge drops of a bitter, pungent fluid from leg joints and other parts of the body, a habit known as 'reflex-bleeding'.

- 2** Why do ladybirds have the habit of reflex-bleeding?
- A** To protect themselves
 - B** To defend predators
 - C** To provoke beetles
 - D** To attract birds

Oil Production

Leads to activities such as:

- * oil waste dumping
- * water pollution
- * oil spills

Effects:

- * extinction of several plant and sea animal species
- * swamping of prime pastures and cropland

- 3 Which of the following statements is **true** about oil production?
- A It is a good business.
 - B It can pose a hazard to environment.
 - C It is carried out everywhere.
 - D It is done in a refinery

Meat extract is made from fresh, lean meat in a vacuum kettle. The meat is boiled until it loses all its colour and the water turns brown. Then the meat is removed and the juice boiled again until most of the liquid has evaporated. As the remaining extract cools, it forms a paste.

- 4 What is the main idea about meat extract?
- A It is derived from dehydrated meat.
 - B It is obtained by boiling meat juice.
 - C It is a colourless semi-solid
 - D It is a fat-free liquid.

Gold does not react with most chemicals, but is attacked by chlorine, fluorine and cyanide. Gold dissolves in mercury, forming amalgam alloys. In particular, gold is insoluble in nitric acid, which will dissolve most other metals. Nitric acid has long been used to confirm the presence of gold in items, and this is the origin of the colloquial term 'acid test'.

- 5 Why is nitric acid used in 'acid test' for gold?
- A It reacts with gold.
 - B It does not dissolve gold.
 - C It does not react with metals.
 - D It forms amalgam alloys with metals.

[Lihat sebelah

The Earth is the third nearest planet to the Sun. It is the heaviest of the stony planets and the densest of all planets in the Solar System. Its orbit, 150 million kilometres from the Sun, ensures the planet is neither scorching nor freezing, while the presence of water and an atmosphere reduce the temperature extremes, allowing evolution of life.

- 6 Planet Earth does not experience extreme weather due to its
- A arid atmosphere
 - B weight and density
 - C moderate temperature
 - D position in the Solar System

Scrap metal, together with lime, is placed in a large furnace and heated until it melts. Impurities in the steel combine with the lime to form slag. The purified steel is then separated from the slag.

- 7 What is the purpose of the above process?
- A To manufacture slag from scrap metal.
 - B To manufacture scrap metal from slag.
 - C To extract scrap metal from steel.
 - D To extract steel from scrap metal.
- 8 Why is lime added to the scrap metal?
- A To get rid of impurities.
 - B To melt the scrap metal.
 - C To heat up the furnace.
 - D To purify the slag.

Fatigue is a daily lack of energy that is not relieved by sleep. People are feeling tired all the time in both mind and body and it can be caused by a number of inter-linked factors. The common causes are stress and unhealthy lifestyle choices such as adopting fad diets to lose weight. Undiagnosed medical conditions could also be another reason for experiencing fatigue.

- 9 Which of the following statements about fatigue is true?
- A Rest is a good solution for fatigue
 - B Lack of energy may lead to fatigue
 - C Improper diet is the main cause of fatigue
 - D Continuous medication can encourage fatigue

Plate tectonics ó There are currently seven major plates recognized and numerous smaller plates. If we could go back in time a billion years or more, we would find the planet Earth with a surface that was different from what it is today. The continents had different shapes and were located in different positions from those of today. There are two types of forces affecting the changing and drifting continents. Destructive forces such as weathering to wear away high points and constructive forces like volcanism to raise the land deposit new material in the form of lava. These constructive forces depend on Earth's internal heat for their source of energy.

- 10 What drives the process of plate tectonics, the currently accepted explanation for the movement of drifting continents?
- A Earth's internal heat
 - B Weathering that can flatten high points
 - C Constructive forces
 - D Destructive forces

[Lihat sebelah

The process of gathering facts through observation and formulating scientific hypotheses and theories is called the scientific method. Many scientific investigations involve the following steps; First, the collection of scientific facts through observation and measurement. Once data have been gathered, scientists try to explain how or why things happen in the manner observed by stating a scientific hypothesis. There can be development of one or more working hypotheses to explain these facts. This is followed by formulation of the scientific theory after the acceptance, modification or rejection of the hypotheses are done based on extensive testing.

- 11** Choose the correct sequence of the development of new scientific knowledge.
- A** Collect data → develop hypothesis → accept, modify or reject hypothesis → test hypothesis → theory.
 - B** Collect data → develop hypothesis → test hypothesis → accept, modify or reject hypothesis → theory.
 - C** Collect data → develop hypothesis → theory → accept, modify or reject hypothesis → test hypothesis
 - D** Collect data → develop hypothesis → accept, modify or reject hypothesis → theory → test hypothesis

3G is short for third-generation technology. It is used in the context of mobile phone standards. The services associated with 3G provide the ability to transfer simultaneously both voice data in the form of a telephone call and non-voice data such as downloading information, exchanging e-mail and instant messaging.

- 12** Which of the following is true about 3G?
- A** It limits telephone calls.
 - B** It transfers only voice data.
 - C** It is utilized in mobile phones.
 - D** It is used to download services.

[Lihat sebelah

Biodiesel has many advantages over diesel fuel. It can be used in *conventional* diesel engines without having to convert the engine, which is an expensive process. It also burns cleaner than diesel.

13 Which of the following best replaces the word *conventional* in the text?

- A ordinary.
- B modern.
- C special.
- D formal

A Trojan horse is technically a normal computer programme. It cannot replicate and spread by itself, nor is it able to function on its own. It needs to deceive the computer user into allowing it to perform actions such as deleting the user's files or installing other harmful software. This may occur when the user opens an e-mail or e-mail attachment, or visit a malicious website.

14. Which of the following is **true** about a Trojan horse?

- A It is able to function on its own.
- B It is able to reproduce on its own.
- C It could trick its user into running it.
- D It is only found in an e-mail attachment

Vitamins	Sources	Functions
A	Fish liver oil, egg yolk, green leaves	Aid growth and night vision
E	Green leaves, whole grain cereal	Help protect blood cells and cell membrane
K	Green leaves, liver	Essential for blood clotting

[Lihat sebelah

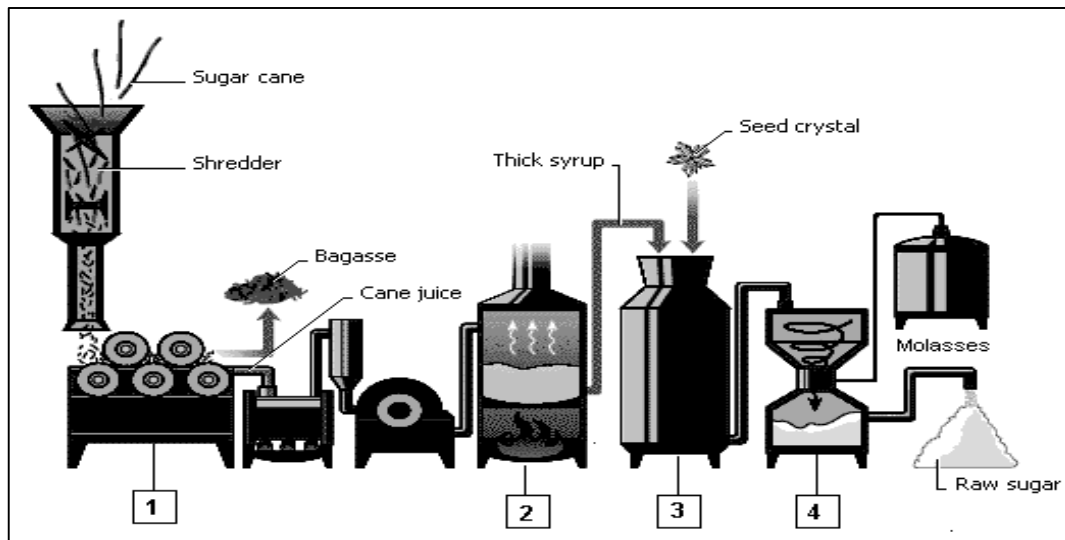
15 Lina has poor eyesight and problems driving at night. Which of the following foods will reduce her problems?

- A Mustard green and cornflakes.
- B Cabbage and fish liver oil.
- C Spinach and egg yolk.
- D Lettuce and broccoli.

Sugar processing begins when the cane plants arrive at the sugar mill. Rotating knives, shredders, and crushers extract the juice from the cane and create bagasse, a fiber that can be burned to heat the cane juice. Heating the juice evaporates off excess water and condenses the juice into a thick syrup. Sugar granules act as seed crystals when they are added to the syrup, making the dissolved sugar in the syrup crystalize. When as much sugar as possible has crystallized in the syrup, the mix is spun in a centrifuge, which separates the remaining syrup (now called molasses) from the raw sugar crystals.

16 Why are the sugar granules added to the syrup?

- A They fortify the syrup
- B They emulsify the syrup.
- C They regulate the production of sugar crystals.
- D They facilitate the formation of sugar crystals.



[Lihat sebelah

- 17 At which stage is the excess water removed from the cane juice?
- A 1
 - B 2
 - C 3
 - D 4

Some desert plants take advantage of rare favourable conditions. These are usually annual plants. They complete their life cycles within a very short period when adequate water is available. When the drought period arrives, these plants drop their leaves and become dormant. Their seeds may become dormant for years, if conditions are not favourable for germination.

- 18 How do desert plants survive?
- A By having favourable conditions.
 - B By having short life cycles.
 - C By dropping their leaves.
 - D By becoming dormant.

You can consume almost as many calories, sodium and more fat in one fast food meal than you should consume in a day. Even if you have a relatively small meal consisting of only a small carbonated drink, you will still consume 640 calories, 20 grams of fat and 700 milligrams of sodium

- 19 The following can be inferred from the text **except**
- A Fast food is not a balanced meal.
 - B Excessive intake of fast food is fattening.
 - C It is advisable to eat small portions of fast food.
 - D Regular consumption of fast food is detrimental to health.

[Lihat sebelah

Pills are mixed with solid citric acid and a solid carbonate to assist in their dissolution. When the pills are put into water, the citric acid forms hydrogen ions which react with the carbonate to produce bubbles of carbon dioxide gas. It is these gas bubbles that spread the medicine throughout the water.

20 Which of the following make the pills dissolve faster?

- A** Carbon dioxide bubbles.
- B** Solid carbonate crystals.
- C** Solid citric acid.
- D** Hydrogen ions.

In nanotechnology, engineered nanoparticles and nano-scale constructions will eventually revolutionalise many industries. For instance, particles of silver and silica have been reduced to nano scale to assume novel properties. Precisely shaped nano constructions singly or in combination will enhance products or create new properties. Carbon nanotubes, fullerenes and polymers are such nanotechnology enabled materials.

21. Which of the following are nanostructures?

- I** Polymers
 - II** Fullerenes
 - III** Silica articles
 - IV** Carbon nanotubes
-
- A** I, II
 - B** III, IV
 - C** I, II, III
 - D** I, II, IV

[Lihat sebelah

SULIT

The contour feathers found in the tail and wings of birds are long and used as a device for flight. The plumules or down traps heat to keep the birds warm. Their barbs act as interlocking devices to hold the feathers in shape. They are crucial to keep the feathers sturdy during flight. The filoplumes or hair feathers are not as fluffy as down but are also used to keep the birds warm.

22 Based on the text, which of the following pairs is **incorrectly** matched?

	Type of feather	Function
A	Contour feathers	Aerodynamics
B	Plumules	Insulation
C	Barbs	Protection

The homosphere includes the troposphere (up to 9-16 km), stratosphere (up to about 50 km) and mesosphere (up to about 100 km) . The ozone layer is about 15 ó 40 km above the surface of the Earth and protects us from the harmful ultraviolet rays of the sun.

23 At which atmospheric level would we find the ozone layer?

- A In the stratosphere.
- B In the troposphere.
- C In the mesosphere.

[Lihat sebelah

Flooding occurs when there is no proper drainage. In areas of non-porous rocks, water runs off the land very quickly causing overflow. Flooding also happens when winter snows thaw in spring. Huge floods occur in Siberia every spring, when snow melts while the rivers are still iced up. Gales and high tides cause water to flow inland in low-lying coastal lands.

24 Choose the correct answer that shows the cause and effect relationship of flood.

	Causes	Effect
A	No proper drainage, Winter snows thaw in spring, Gales and high tides	Water runs off the land, Huge floods, Water flows in low lying coastal lands
B	Non-porous rocks, Snow melts in Siberia, Rivers are still iced-up	Overflow, Rivers are still iced-up, Water flows in low lying coastal lands
C	Gales and high tides, Winter snows thaw in spring, Huge floods,	Water flows in low lying coastal lands, Non-porous rocks, Gales and high tides
D	Water runs off the land, Huge floods, Rivers are still iced-up	Winter snows thaw in spring, No proper drainage, Snow melts in Siberia

Viscosity describes a fluid's internal resistance to flow and may be thought of as a measure of fluid friction. In other words, it is the measure of resistance of a fluid which is being deformed by either shear stress or extensional stress. The less viscous something is, the greater its ease of movement. All real fluids, except superfluids, have some resistance to stress, but a fluid which has no resistance to shear stress is known as an ideal fluid.

25 An ideal fluid is one that

- A is being deformed by shear stress.
- B is a measure of extensional stress.
- C has no resistance to shear stress
- D has greater ease of movement

Questions 26 – 30 are based on the following passage. Choose the most *appropriate* answer from the options given.

Bluetooth is one of the wireless 26)_____ used in devices such as mobile phones and computers to send information. Other electronic devices such as baby monitors and garage-door openers also use the 27)_____ in the same ISM band as Bluetooth. Therefore, the essential part of the design process of Bluetooth is to ensure these other devices do not 28)_____ with one another. One of the ways Bluetooth devices avoid interfering with other systems is by sending out very weak 29)_____ of about 1 milliwatt. The low power limits the range of a Bluetooth service to about 10 metres, cutting the chances of interference between your computer system and your 30)_____ telephone or television. Even with the low power, Bluetooth does not require any wire between communicating devices. The walls in your house will not stop a Bluetooth signal, making it useful for controlling several devices in different rooms.

- 26 A line
 B equipment
 C technology
 D communication
- 27 A rates
 B vibrations
 C frequencies
 D transmissions
- 28 A mix
 B join
 C hinder
 D interfere
- 29 A signs
 B power
 C energy
 D signals

- 30 A portable
 B movable
 C stagnant
 D transferable

KERTAS SOALAN TAMAT

Name : í í í í í í í í í í í í í í í í Class: í í í í í .í .

ENGLISH FOR SCIENCE AND TECHNOLOGY (PAPER 2)

ANSWER SHEET

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|-----|-------|-------|-------|-------|
| 1. | = A = | = B = | = C = | = D = |
| 2. | = A = | = B = | = C = | = D = |
| 3. | = A = | = B = | = C = | = D = |
| 4. | = A = | = B = | = C = | = D = |
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| 13. | = A = | = B = | = C = | = D = |
| 14. | = A = | = B = | = C = | = D = |
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| 16. | = A = | = B = | = C = | = D = |
| 17. | = A = | = B = | = C = | = D = |
| 18. | = A = | = B = | = C = | = D = |
| 19. | = A = | = B = | = C = | = D = |
| 20. | = A = | = B = | = C = | = D = |
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| 22. | = A = | = B = | = C = | |
| 23. | = A = | = B = | = C = | |
| 24. | = A = | = B = | = C = | = D = |
| 25. | = A = | = B = | = C = | = D = |
| 26. | = A = | = B = | = C = | = D = |
| 27. | = A = | = B = | = C = | = D = |
| 28. | = A = | = B = | = C = | = D = |
| 29. | = A = | = B = | = C = | = D = |
| 30. | = A = | = B = | = C = | = D = |