

Nama: _____

Ting: _____

SULIT

6355/2

6355/2

English

for Science

and

Technology

Kertas 2

Julai – Ogos

2005

1 jam

JABATAN PELAJARAN TERENGGANU

DENGAN KERJASAMA

PERSIDANGAN KEBANGSAAN PENGETUA

SEKOLAH MENENGAH MALAYSIA

CAWANGAN TERENGGANU

PEPERIKSAAN PERCUBAAN SPM

TAHUN 2005

ENGLISH FOR SCIENCE AND TECHNOLOGY

Kertas 2

Satu jam

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 Bahagian B di dalam kertas jawapan objektif yang disediakan.*
4. *Soalan-soalan yang dikemukakan dalam kertas soalan ini mungkin mempunyai tiga atau empat pilihan.*

Instructions

1. *This question paper consists of two sections and 30 questions.*
 2. *Answer all questions.*
 3. *Shade all your answers for Section A and Section B on the objective answer sheet provided.*
 4. *Questions in this question paper might have three or four options.*
-

Kertas soalan ini mengandungi 15 halaman bercetak.

Section A

[25 marks]

You are advised to spend 50 minutes on this section.

Questions 1 – 25

Each question is based on a given stimulus. Study the information carefully and choose the best answer. Then shade the answer in the answer sheet provided.

Question 1

Read the extract below and answer the question that follows.

Argon is used as the inert gas in light bulbs. It is unreactive and, unlike air, does not react with the hot metal filament in the light bulb. This helps the light bulb to last longer.

1 Which of the following helps the light bulb to last longer?

- A Argon is an inert gas.
- B Argon is not like air and unreactive.
- C Argon does not react with the hot metal filament.

Question 2

A gardener tests the pH of the soil in his garden. The soil has a pH of 5.8.
The table below shows the pH range in which different vegetables will grow successfully.

<i>Vegetable</i>	<i>pH range</i>
Broad beans	5.5 – 7.0
Carrots	6.0 – 7.5
Lettuce	6.5 – 7.5
Potatoes	5.5 – 6.5

2 Which vegetables will the gardener be able to grow successfully in his garden?

- A Carrots and lettuce
- B Lettuce and potatoes
- C Broad beans and carrots
- D Broad beans and potatoes

Question 3

Read the extract below and answer the question that follows.

Smoking kills. Nicotine in tobacco is a poisonous drug. It damages the heart, blood vessels and nerves. Smokers get addicted to it, which is why they find it hard to give up smoking. Tar forms in the lungs when tobacco smoke cools. The tar contains chemicals that are known to cause cancers. Carbon monoxide in tobacco smoke is a poisonous gas which stops blood carrying oxygen round the body.

3 Smoking can kill because of the following reasons **except**

- A it is addictive.
- B it can cause cancers.
- C it damages blood vessels.
- D it stops blood to carry oxygen.

Question 4

Read the extract below and answer the question that follows.

The demand for polymer materials (plastics) is increasing. Because plastics are fairly cheap they are often thrown away when finished with. Many landfill sites discourage the disposal of plastics because most plastics are non-biodegradable. Unlike wood, plastics do not break down by the action of micro-organisms, and unlike metal, plastics do not corrode.

4 Most plastics are non-biodegradable because

- A plastics do not corrode.
- B plastics do not break down.
- C plastics are thrown when finished with.
- D plastics are unaffected by micro-organisms.

Questions 5 and 6

Read the extract below and answer the questions that follow.

Radar (RADio Detection And Ranging) can tell us the position of a moving or stationary object, even if it is too far away to see, or if it is dark or foggy. It is essential for air traffic controllers, who need to know the height and position of aircraft around busy airports. It also enables ships to travel safely without risk of collisions. Radar can detect objects as small as an insect or as large as a mountain.

Weather observation and forecasting are helped by radar, which can detect the approach of storms or hurricanes. Scientists use radar to find out about the atmosphere and other planets. It is essential for space travel, allowing controllers on the ground to track craft before they reach their orbits. Radar has many military uses, as it can warn of approaching missiles or attacking planes and ships. On the ground, police use radar to catch speeding motorists.

5 Radar is useful to the following people **except**

- A the army.
- B the police.
- C the scientists.
- D the motorists.

6 Radar **cannot** be used to

- A forecast weather.
- B attack planes and ships.
- C track craft in the space.
- D catch speeding motorists.

Question 7

Read the extract below and answer the question that follows.

Unicellular organisms have a body that is very small. They are micro organisms which can only be seen through the microscope. These micro organisms can be found in water or in wet places.

7 Which of the following statements is **incorrect** about unicellular organisms?

- A They are very tiny in size.
- B They can live in watery places.
- C They can be seen by unaided eyes.

Question 8

Study the information in the table below and answer the question that follows.

Substance	Melting point °C	Boiling point °C
Water	0	100
Alcohol	-117	78
Tungsten	3410	5500
Iron	1539	2887
Oxygen	-219	-183

8 Which substance will remain in a liquid form at room temperature?

- A Iron
- B Oxygen
- C Alcohol
- D Tungsten

Question 9

Read the extract below and answer the question that follows.

Chameleons are small lizards. In the wild they are very hard to see, as they match their background so well. This is partly because they are able to change their colours in as little as two minutes. It is not yet completely understood how they do this, but it is known that colour cells lie below the surface of the skin. These cells alter their position as the temperature and light vary. In bright sunshine the chameleon is a rich green, while at night it becomes whiter. A frightened chameleon may turn pale, while an angry one goes blackish green.

- 9 Chameleons are difficult to be seen because
- A they change colours every two minutes.
 - B they can camouflage themselves well.
 - C their colour cells can change position.

Question 10

Read the extract below and answer the question that follows.

Tissue culture is another way to produce large numbers of clones very quickly. Tiny pieces of tissue are grown in the laboratory onto complete plants. This is much faster and more reliable than growing new varieties by seed. Tissue culture is being used to build up stocks of endangered plants.

- 10 Tissue culture is
- A endangering plants.
 - B growing by seed.
 - C fast cloning.

Question 11

Read the extract below and answer the question that follows.

Laser beam is the brightest beam ever known. It travels in a straight line like ordinary beams of light. However it does not spread. It is pencil thin and so intense that it can make a hole through steel in less than a second. This means that a laser beam is highly directional and can be precisely aimed at far away object.

11 The following are the properties of laser beam **except**

- A it travels in straight line.
- B it does not spread.
- C it is very intense.
- D it has directions.

Question 12

Read the extract below and answer the question that follows.

The air we breathe is part of a thick blanket of air wrapped around the Earth, known as the atmosphere. The air is a mixture of gases, mainly nitrogen (four fifths) and oxygen (one fifth). It gets thinner or less dense with height and fades away completely about 800 kilometres above the ground.

12 The air we breathe is

- A 80 per cent oxygen and 20 per cent nitrogen.
- B not available about 800 km above the ground.
- C thicker on the mountain than on the ground.

Question 13

Read the text below and answer the question that follows.

Shingles, or Herpes Zoster, is caused by the same virus that causes chicken pox. This virus can hide inside the nerve cells of those who have had chicken pox before. It can reappear later as shingles. Outbreaks of shingles start with severe burning pain, itching, redness and numbness. One to three days later, a red rash appears. A group of fluid-filled blisters then forms on this red base, breaking open and forming scabs.

13 The following are symptoms of shingles **except**

- A red rashes.
- B chicken pox.
- C burning pain.
- D fluid-filled blisters.

Question 14

Read the text below and answer the question that follows.

Our eyes help us to see things around us when there is light. When light which enters our eyes through the pupil and then through the lens falls on the retina, an image of the thing in focus is formed. The retina is connected to the brain by a nerve called the optic nerve. The nerve carries impulses and signals to the brain which are then turned and interpreted into images of things.

14 Choose the correct sequence that shows how images of things that our eyes see are formed.

- A Light → pupil → lens → retina → optic nerve → brain → images
- B Light → pupil → lens → retina → brain → optic nerve → images
- C Light → pupil → retina → lens → brain → optic nerve → images

Question 15

Read the extract below and answer the question that follows.

A hovercraft does not float on the water, but flies over the surface of the water on a cushion of air. The cushion of air is created by pumping air downward under the craft. The air is prevented from escaping by large flexible rubber skirts. A forward motion is provided by large propeller fans on the craft and is steered either by turning the propellers themselves or by huge rudder fins.

- 15 Based on the information given in the extract, choose the **incorrect** function of the tools provided by a hovercraft.

	Tool	Function
A	Propeller fans	turning
B	Rudder fins	steering
C	Propeller fans	moving forward
D	Rubber skirts	trapping air under the craft

Question 16

Read the text below and answer the question that follows.

Hubble is essentially an optical-ultraviolet telescope which enables astronomers to see into a volume of space 300 to 400 times larger than that permitted by other systems. At the same time, Hubble's function is not impeded by any of the problems caused by the atmosphere. It is equipped with five principal scientific instruments. They are a wide-field and planetary camera, a faint-object spectrograph (a camera for photographing spectra), a high-resolution spectrograph, a high-speed photometer (an instrument for measuring the intensity of light) and a faint-object camera.

- 16 Which statement is **not** true about Hubble telescope?
- A** It is an optical-ultraviolet telescope.
 - B** It is unaffected by atmospheric problems.
 - C** It is equipped with main scientific instruments.
 - D** It is 300 to 400 times larger than other telescopes.

Question 17

Study the information in the table below and answer the question that follows.

Differences	Solid	Liquid	Gas
Arrangement of particles	Particles are packed close to each other	Particles are loosely arranged	Particles are widely separated
Movements of particles	Vibrate about fixed position	Move at random in a group and sometimes collide	Move quickly at random and often collide
Volume	Fixed	Fixed	Changes
Force of attraction	Very strong	Moderate	Very weak

17 Based on the information above, which of the following statements is **incorrect**?

- A In a gas, collision of the particles occurs frequently.
- B The particles in a solid are held together strongly.
- C In a liquid, the particles are arranged far apart.
- D The volume of a gas depends on the container.

Question 18

Read the text below and answer the question that follows.

All body cells are constructed accordingly to the same basic pattern. Around the outside of every cell is a boundary wall or cell membrane enclosing the jelly-like substance, the cytoplasm. Embedded in this is the nucleus which houses the genetic instruction in the form of chromosomes.

18 The nucleus can be found deep in the

- A cell membrane.
- B chromosomes.
- C cytoplasm.

Question 19

The table below shows the masses of a sample rock before and after immersing it in water.

Mass before immersion	133 g
Mass after immersion	146 g

19 Which statement best explains the increment in the mass after immersion?

- A The water entered the rock and was absorbed by the grains.
- B The water had filled up the gaps between the grains of the rock.
- C The water reacted with the grains of the rock and formed new particles.

Question 20

The mass number of an element is the total of the number of protons and the number of neutrons.

Element	Number of protons	Number of neutrons	Mass number
Helium	2	2	4
Boron	5	6	11
Lithium	3	4	X
Sodium	11	12	23

20 What is X?

- A 1
- B 7
- C 12

Question 21

Read the text below and answer the question that follows.

When your car radiator overheats, this is what you have to remember. Don't add any water to the radiator while the engine is still hot. Wait for about 20 to 30 minutes to allow the engine to cool down before making any attempt to open the radiator cap. If the radiator cap is opened before the engine has cooled down sufficiently, you run the risk of hurting yourself from the steam or boiling water that may spurt from the radiator.

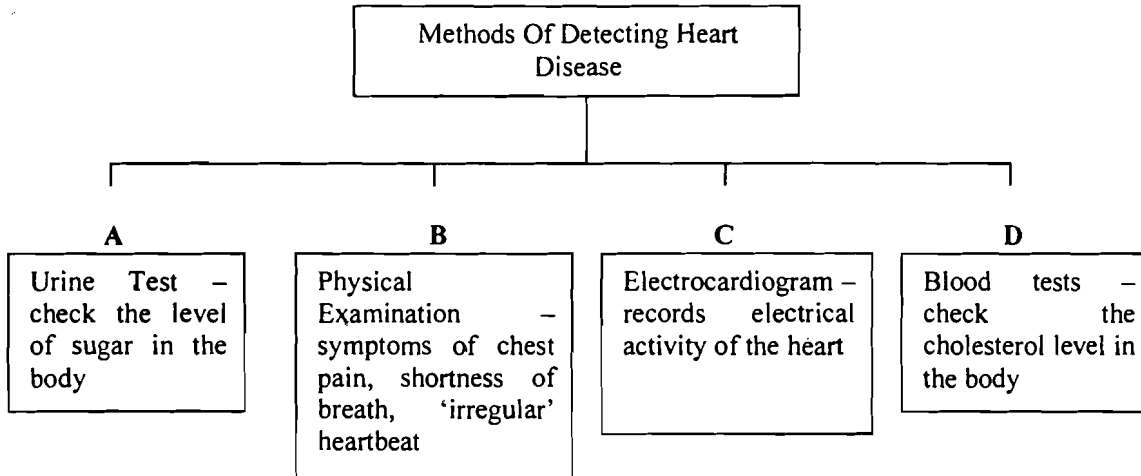
21 To avoid getting hurt when you open your radiator cap, you must

- A wait for the boiling water to spurt out first.
- B wait for your engine to cool down first.
- C wait for your radiator to overheat first.

Question 22

Study the information below and answer the question that follows.

- 22 Heart disease can be determined by a number of methods. Which of the following is **not** one of them?

**Question 23**

Read the text below and answer the question that follows.

In recent years, improved geological age-dating techniques have made it clear that Earth is billions of years old. This is shown when photos taken from the air and from orbit are studied. Scientists have found that Earth is scarred with many impact craters caused by gigantic meteors, most of which are so old and eroded that they had been overlooked. For example, in Quebec, a depression 90 kilometres wide and encircled by water turned out to be a 212-million-year-old crater that stood out clearly when it was viewed from orbit. To date, more than 150 terrestrial impact craters have been identified.

- 23 From the information above, we can **conclude** that
- A the old and eroded craters reflect the Earth’s age.
 - B there are new geological age-dating techniques.
 - C a depression can be encircled by water.
 - D craters are often ignored.

Question 24

Study the information given below and answer the question that follows.

Calorie Content of Malaysian Traditional Food

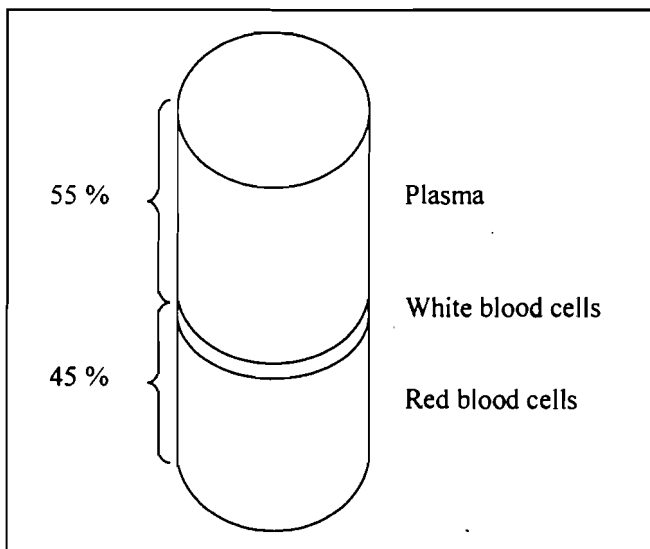
Food	Serving Size	Calorie Content
<i>Bingka Ubi Kayu</i>	2 pieces	301 – 600 cal
<i>Laddu</i>	1 piece	301 – 400 cal
<i>Popia</i>	1 piece	51 – 150 cal
<i>Kuih Bangkit</i>	2 pieces	50 – 100 cal

24 From the information in the table above, a person who wants to lose weight will **not** be successful if he or she consumes too much of

- A *Bingka Ubi Kayu*
- B *Kuih Bangkit*
- C *Laddu*
- D *Popia*

Question 25

The diagram below shows parts of blood in a normal human body.



25 Based on the diagram, which of the following statements is **not** true?

- A White blood cells take only small portion of the blood volume.
- B Red blood cells make up more than half of the blood volume.
- C Plasma occupies the largest portion of the blood volume.
- D Blood comprises red and white blood cells and plasma.

Section B

[5 marks]

You are advised to spend 10 minutes on this section.

Questions 26-30

Read the following passage and then shade the best answer in the answer sheet provided.

Recently, people have become worried about acid rain. Rain water with unusually high acidity has been falling for some years in many parts of the world.

How does acid get into the rain? The main substance responsible is the gas sulphur dioxide. It is produced mostly by burning coal. All coal contains a little sulphur as an impurity. When it burns, the sulphur 26 with oxygen to produce sulphur dioxide.

Sulphur dioxide is a poisonous gas with sharp, choking smell. Sulphur dioxide is a very 27 gas. It dissolves in rain water to produce an acid called sulphuric acid. The effects of this can be dramatic. On certain days in Mexico City, for example, the rain contains so much sulphuric acid that it burns holes in clothing!

Most of the coal burnt in UK is used for making electricity in coalfired power stations. New ways are being introduced to 28 sulphur dioxide from the gases which come out of these power stations. Using different methods of producing electricity could also mean less sulphur dioxide being produced. For example, hydro-electric power stations do not burn 29 and therefore do not produce sulphur dioxide. Also, wind power can be used to make electricity.

Cars also help to make acid rain. The nitrogen oxide that they produce in exhaust 30 dissolve in rain water to produce acids such as nitric acid.

- 26 **A** joins
 B mixes
 C adheres
 D combines
- 27 **A** soluble
 B diluted
 C reactive
- 28 **A** delete
 B remove
 C separate
- 29 **A** oils
 B fuels
 C gases
- 30 **A** fumes
 B clouds
 C billows
 D vapours

KERTAS SOALAN TAMAT