

Reading 1

Reading Passage has **four** sections **A-D**

Choose the correct heading for the each section from the list of headings below. Write the correct number i-vi in boxes **1-4** on your answer sheet.

List of Headings

- i Causes of volcanic eruption
- ii Efforts to predict volcanic eruption
- iii Volcanoes and the features of our planet
- iv Different types of volcanic eruption
- v International relief efforts
- vi The unpredictability of volcanic eruption

- 1. Section A
- 2. Section B
- 3. Section C
- 4. Section D

Volcanoes - earth-shattering news

When Mount Pinatubo suddenly erupted on 9 June 1991, the power of volcanoes past and present again hit the headlines

A Volcanoes are the ultimate earth-moving machinery. A violent eruption can blow the top few kilometres off a mountain, scatter fine ash practically all over the globe and hurt rock fragments into the stratosphere to darken the skies a continent away.

But the classic eruption - cone-shaped mountain, big bang, mushroom cloud and surges of molten lava - is only a tiny part of a global story. Volcanism, the name given to volcanic processes, really has shaped the world. Eruptions have rifted continents, raised mountain chains, constructed islands and shaped the topography of the earth. The entire ocean floor has a basement of volcanic basalt.

Volcanoes have not only made the continents, they are also thought to have made the world's first stable atmosphere and provided all the water for the oceans, rivers and ice-caps. There are now about 600 active volcanoes. Every year they add two or three cubic kilometres of rock to the continents. Imagine a similar number of volcanoes smoking away for the last 3,500 million years. That is enough rock to explain the continental crust.

What comes out of volcanic craters is mostly gas. More than 90% of this gas is water vapour from the deep earth: enough to explain, over 3,500 million years, the water in the oceans. The rest of the gas is nitrogen,

carbon dioxide, sulphur dioxide, methane, ammonia and hydrogen. The quantity of these gases, again multiplied over 3,500 million years, is enough to explain the mass of the world's atmosphere. We are alive because volcanoes provided the soil, air and water we need.

B Geologists consider the earth as having a molten core, surrounded by a semi-molten mantle and a brittle, outer skin. It helps to think of a soft-boiled egg with a runny yolk, a firm but squishy white and a hard shell. If the shell is even slightly cracked during boiling, the white material bubbles out and sets like a tiny mountain chain over the crack - like an archipelago of volcanic islands such as the Hawaiian Islands. But the earth is so much bigger and the mantle below is so much hotter.

Even though the mantle rocks are kept solid by overlying pressure, they can still slowly 'flow' like thick treacle. The flow, thought to be in the form of convection currents, is powerful enough to fracture the 'eggshell' of the crust into plates, and keep them bumping and grinding against each other, or even overlapping, at the rate of a few centimetres a year. These fracture zones, where the collisions occur, are where earthquakes happen. And, very often, volcanoes.

C These zones are lines of weakness, or hot spots. Every eruption is different, but put at its simplest, where there are weaknesses, rocks deep in the mantle, heated to 1,350°C, will start to expand and rise. As they do so, the pressure drops, and they expand and become liquid and rise more swiftly.

Sometimes it is slow: vast bubbles of magma - molten rock from the mantle - inch towards the surface, cooling slowly, to show through as granite extrusions (as on Skye, or the Great Whin Sill, the lava dyke squeezed out like toothpaste that carries part of Hadrian's Wall in northern England). Sometimes - as in Northern Ireland, Wales and the Karoo in South Africa - the magma rises faster, and then flowed out horizontally on to the surface in vast thick sheets. In the Deccan plateau in western India, there are more than two million cubic kilometres of lava, some of it 2,400 metres thick, formed over 500,000 years of slurping eruption.

Sometimes the magma moves very swiftly indeed. It does not have time to cool as it surges upwards. The gases trapped inside the boiling rock expand suddenly, the lava glows with heat, it begins to froth, and it explodes with tremendous force. Then the slightly cooler lava following it begins to flow over the lip of the crater. It happens on Mars, it happened on the moon, it even happens on some of the moons of Jupiter and Uranus. By studying the evidence, volcanologists can read the force of the great blasts of the past. Is the pumice light and full of holes? The explosion was tremendous. Are the rocks heavy, with huge crystalline basalt shapes, like the Giant's Causeway in Northern Ireland? It was a slow, gentle eruption.

The biggest eruptions are deep on the mid-ocean floor, where new lava is forcing the continents apart and widening the Atlantic by perhaps five centimetres a year. Look at maps of volcanoes, earthquakes and island chains like the Philippines and Japan, and you can see the rough outlines of what are called tectonic plates - the plates which make up the earth's crust and mantle. The most dramatic of these is the Pacific

'ring of fire' where there have the most violent explosions

- Mount Pinatubo near Manila, Mount St Helen's in the Rockies and El Chichón in Mexico about a decade ago, not to mention world-shaking blasts like Krakatoa in the Sunda Straits in 1883.

D But volcanoes are not very predictable. That is because geological time is not like human time. During quiet periods, volcanoes cap themselves with their own lava by forming a powerful cone from the molten rocks slopping over the rim of the crater; later the lava cools slowly into a huge, hard, stable plug which blocks any further eruption until the pressure below becomes irresistible. In the case of Mount Pinatubo, this took 600 years.

Then, sometimes, with only a small warning, the mountain blows its top. It did this at Mont Pelée in Martinique at 7.49 a.m. on 8 May, 1902. Of a town of 28,000, only two people survived. In 1815, a sudden blast removed the top 1,280 metres of Mount Tambora in Indonesia. The eruption was so fierce that dust thrown into the stratosphere darkened the skies, canceling the following summer in Europe and North America. Thousands starved as the harvest failed, after snow in June and frosts in August. Volcanoes are potentially world news, especially the quiet ones.

Questions 5-9

Answer the questions below using **NO MORE THAN THREE WORDS AND/ OR A NUMBER** from the passage for each answer.

Write your answers in boxes **5-9** on your answer sheet.

5. What are the sections of the earth's crust, often associated with volcanic activity, called?
6. What is the name given to molten rock from the mantle?
7. What is the earthquake zone on the Pacific Ocean called?
8. For how many years did Mount Pinatubo remain inactive?

Questions 9-13

Complete the summary below. Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

Write your answers in boxes 9-13 on your answer sheets.

Volcanic eruptions have shaped the earth's land surface. They may also have produced the world's atmosphere and 9 Eruptions occur when molten rocks from the earth's Mantle rise and expand. When they become liquid, they move more quickly through cracks in the surface. There are different types of eruption. Sometimes the 10 moves slowly and forms outcrops of granite on the earth's surface. When it moves more quickly it may flow out in thick horizontal sheets. Examples of this type of eruption can be found in Northern Ireland, Wales, South Africa and 11 A third type of eruption occurs when the lava emerges very quickly and 12 violently. This happens because the magma moves so suddenly that 13 are emitted.

READING 2

Experience versus speed

Certain mental functions slow down with age, but the brain compensates in ways that can keep seniors as sharp as youngsters.

Jake, aged 16, has a terrific relationship with his grandmother Rita, who is 70. They live close by, and they even take a Spanish class together twice a week at a local college. After class they sometimes stop at a cafe for a snack. On one occasion, Rita tells Jake, 'I think it's great how fast you pick up new grammar. It takes me a lot longer.' Jake replies, 'Yeah, but you don't seem to make as many silly mistakes on the quizzes as I do. How do you do that?'

In that moment, Rita and Jake stumbled across an interesting set of differences between older and younger minds. Popular psychology says that as people age their brains 'slow down'. The implication, of course, is that elderly men and women are not as mentally agile as middle-aged adults or even teenagers. However, although certain brain functions such as perception and reaction time do indeed take longer, that slowing down does not necessarily undermine mental sharpness. Indeed, evidence shows that older people are just as mentally fit as younger people because their brains compensate for some kinds of declines in creative ways that young minds do not exploit.

Just as people's bodies age at different rates, so do their minds. As adults advance in age, the perception of sights, sounds and smells takes a bit longer, and laying down new information into memory becomes more difficult. The ability to retrieve memories also quickly slides and it is sometimes harder to concentrate and maintain attention.

On the other hand, the ageing brain can create significant benefits by tapping into its extensive hoard of accumulated knowledge and experience. The biggest trick that older brains employ is to use both hemispheres simultaneously to handle tasks for which younger brains rely predominantly on one side. Electronic images taken by cognitive scientists at the University of Michigan, for example, have demonstrated that even when doing basic recognition or memorization exercises, seniors exploit the left and right side of the brain more extensively than men and women who are decades younger. Drawing on both sides of the brain gives them a tactical edge, even if the speed of each hemisphere's process is slower.

In another experiment, Michael Falkenstein of the University of Dortmund in Germany found that when elders were presented with new computer exercises they paused longer before reacting and took longer to complete the tasks, yet they made 50% fewer errors, probably because of their more deliberate pace.

One analogy for these results might be the question of who can type a paragraph 'better': a 16-year-old who glides along at 60 words per minute but has to double back to correct a number of mistakes or a 70-year-old who strikes keys at only 40 words per minute but spends less time fixing errors? In the end, if 'better' is defined as completing a clean paragraph, both people may end up taking the same amount of time.

Computerized tests support the notion that accuracy can offset speed. In one so-called distraction exercise, subjects were told to look at a screen, wait for an arrow that pointed in a certain direction to appear, and then use a mouse to click on the arrow as soon as it appeared on the screen. Just before the correct symbol appeared, however, the computer displayed numerous other arrows aimed in various other directions. Although younger subjects cut through the confusion faster when the correct arrow suddenly popped up, they more frequently clicked on incorrect arrows in their haste.

Older test takers are equally capable of other tasks that do not depend on speed, such as language comprehension and processing. In these cases, however, the elders utilize the brain's available resources in a different way. Neurologists at Northwest University came to this conclusion after analyzing 50 people ranging from age 23 to 78. The subjects had to lie down in a magnetic resonance imaging (MRI) machine and concentrate on two different lists of printed words posted side by side in front of them. By looking at the lists, they were to find pairs of words that were similar in either meaning or spelling.

The eldest participants did just as well on the tests as the youngest did, and yet the MRI scans indicated that in the elders' brains, the areas which are responsible for language recognition and interpretation were much less active. The researchers did find that the older people had more activity in brain regions responsible for attentiveness. Darren Gleitman, who headed the study, concluded that older brains solved the problems just as effectively but by different means.

Questions 1-3

Choose the correct answer A, B, C or D and write them on your answer sheet from 1-3

1. The conversation between Jake and Rita is used to give an example of
 - A. the way we learn languages.
 - B. the changes that occur in our brains over time.
 - C. the fact that it is easier to learn a language at a young age.
 - D. the importance of young and old people doing things together.
2. In paragraph six, what point is the analogy used to illustrate?
 - A. Working faster is better than working slower.
 - B. Accuracy is less important than speed.
 - C. Accuracy can improve over time.
 - D. Working faster does not always save time.
3. In the computerized distraction exercises, the subjects had to
 - A. react to a particular symbol on the screen.
 - B. type a text as quickly as possible.
 - C. move an arrow in different directions around the screen.
 - D. click on every arrow that appeared on the screen.

Questions 4-7

Complete each sentence with the correct ending A-F.

Write the correct letter **A-F** in boxes 4-7 on your answer sheet

4. According to popular psychology
 5. Researchers at the University of Michigan showed that
 6. Michael Falkenstein discovered that
 7. Scientists at Northwest University concluded that
-
- A. the older we get the harder it is to concentrate for any length of time.
 - B. seniors take longer to complete tasks but with greater accuracy.
 - C. old people use both parts of their brain more than young people.
 - D. older people use their brains differently but achieve the same result.
 - E. the speed of our brain decreases with age.
 - F. older people do not cope well with new technology.

Questions 8-12

Complete the summary below.

Choose **NO MORE THAN ONE WORD** from the passage for each answer. Write your answers in spaces **8-12** of your answer sheet.

People's bodies and 8 _____ grow older at varying stages. As we age our senses take longer to process information and our aptitude for recalling 9 _____ also decreases. However, older people's brains do have several advantages. Firstly, they can call upon both the 10 _____ and 11 _____ which is already stored in their brain. Secondly, although the 12 _____ of each side of their brain is reduced, they are able to use both sides at once.

Reading Passage has five sections A-E

Choose the correct heading for section A and C-E from the list of headings below. Write the correct number i-viii in boxes 28-31 on your answer sheet.

List of Headings

- i The connection between health-care and other human rights
- ii The development of market-based health systems.
- iii The role of the state in health-care
- iv A problem shared by every economically developed country
- v The impact of recent change
- vi The views of the medical establishment
- vii The end of an illusion
- viii Sustainable economic development

1 Section A

2 Section C

3 Section D

4 Section E

Example Answer

Section B viii

The Problem of Scarce Resources

Section A

The problem of how health-care resources should be allocated or apportioned, so that they are distributed in both the most just and most efficient way, is not a new one. Every health system in an economically developed society is faced with the need to decide (either formally or informally) what proportion of the community's total resources should be spent on health-care; how resources are to be apportioned; what diseases and disabilities and which forms of treatment are to be given priority; which members of the community are to be given special consideration in respect of their health needs; and which forms of treatment are the most cost-effective.

Section B

What is new is that, from the 1950s onwards, there have been certain general changes in outlook about the finitude of resources as a whole and of health-care resources in particular, as well as more specific changes regarding the clientele of health-care resources and the cost to the community of those resources. Thus, in the 1950s and 1960s, there emerged an awareness in Western societies that resources for the provision of fossil fuel energy were finite and exhaustible and that the capacity of nature or the environment to sustain economic development and population was also finite. In other words, we became aware of the obvious fact that there were 'limits to growth'. The new consciousness that there were also severe limits to health-care resources was part of this general revelation of the obvious. Looking back, it now seems quite incredible that in the national health systems that emerged in many countries in the years immediately after the 1939-45 World War, it was assumed without question that all the basic health needs of any community could be satisfied, at least in principle; the 'invisible hand' of economic progress would provide.

Section C

However, at exactly the same time as this new realization of the finite character of health-care resources was sinking in, an awareness of a contrary kind was developing in Western societies: that people have a basic right to health-care as a necessary condition of a proper human life. Like education, political and legal processes and institutions, public order, communication, transport and money supply, health-care came to be seen as one of the fundamental social facilities necessary for people to exercise their other rights as autonomous human beings.

People are not in a position to exercise personal liberty and to be self-determining if they are poverty-stricken, or deprived of basic education, or do not live within a context of law and order. In the same way, basic health-care is a condition of the exercise of autonomy.

Section D

Although the language of 'rights' sometimes leads to confusion, by the late 1970s it was recognized in most societies that people have a right to health-care (though there has been considerable resistance in the United States to the idea that there is a formal right to health-care). It is also accepted that this right generates an obligation or duty for the state to ensure that adequate health-care resources are provided out of the public purse. The state has no obligation to provide a health-care system itself, but to ensure that such a system is provided. Put another way, basic health-care is now recognized as a 'public good', rather than a 'private good' that one is expected to buy for

oneself. As the 1976 declaration of the World Health Organisation put it: 'The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition'. As has just been remarked, in a liberal society basic health is seen as one of the indispensable conditions for the exercise of personal autonomy.

Section E

Just at the time when it became obvious that health-care resources could not possibly meet the demands being made upon them, people were demanding that their fundamental right to health-care be satisfied by the state. The second set of more specific changes that have led to the present concern about the distribution of health-care resources stems from the dramatic rise in health costs in most OECD countries, accompanied by large-scale demographic and social changes which have meant, to take one example, that elderly people are now major (and relatively very expensive) consumers of health-care resources. Thus in OECD countries as a whole, health costs increased from 3.8% of GDP in 1960 to 7% of GDP in 1980, and it has been predicted that the proportion of health costs to GDP will continue to increase. (In the US the current figure is about 12% of GDP, and in Australia about 7.8% of GDP.)

As a consequence, during the 1980s a kind of doomsday scenario (analogous to similar doomsday extrapolations about energy needs and fossil fuels or about population increases) was projected by health administrators, economists and politicians. In this scenario, ever-rising health costs were matched against static or declining resources.

Note

OECD: Organisation for Economic Cooperation and Development GDP: Gross Domestic Products
Questions 5-8

Classify the following as first occurring

A between 1945 and 1950 B between 1950 and 1980 C after 1980 Write the correct letter A, B or C in boxes 32-35 on your answer sheet.

- 5 the realisation that the resources of the national health system were limited
- 6 a sharp rise in the cost of health-care.
- 7 a belief that all the health-care resources the community needed would be produced by economic growth
- 8 an acceptance of the role of the state in guaranteeing the provision of health-care.

Questions 8 - 12

Do the following statements agree with the view of the writer in Reading Passage? In boxes 8-12 on your answer sheet write:

YES - if the statement agrees with the views of the writer NO - if the statement contradicts the views

of the writer
IELTS Fighter

NOT GIVEN if it is impossible to say what the writer thinks about this

8. Personal liberty and independence have never been regarded as directly linked to health-care.
9. Health-care came to be seen as a right at about the same time that the limits of health-care resources became evident.
10. IN OECD countries population changes have had an impact on health-care costs in recent years.
11. OECD governments have consistently underestimated the level of health-care provision needed.
12. In most economically developed countries the elderly will to make special provision for their health-care in the future.

