

# IELTS

Name :

Batch:

## CRASH

### Reading Lecture-4

## READING PRACTICE PASSAGES

### Reading Passage 1

You should spend about **20minutes** on Questions **1-13** which are based on Reading Passage 1 below.

## SAVING LANGUAGE

***For the first time, linguists have put a price on language. To save a language from extinction isn't cheap- but more and more people are arguing that the alternative is the death of communities.***

There is nothing unusual about a single language dying. Communities have come and gone throughout history and with them their language. But what is happening today is extraordinary, judged by the standards of the past. It is language extinction on a massive scale. According to the best estimates, there are some 6000 languages in the world. Of these, about half are going to die out in the course of the next century: that's 3000 languages in 12 months. On average, there is a language dying out somewhere in world every 2 weeks or so.

How do we know? In the course of the past two or three decades, linguists all over the world have been gathering comparative data. If they find a language with just a few speakers left, and nobody is bothering to pass the language on to the children, they conclude that language is bound to die out soon. And we have to draw the same conclusion if a language has less than 100 speakers. It is not likely to last very long. A 1999 survey shows that 97% of the world's languages are spoken by just 4% of the people.

It is late to do anything to help many languages, where the speakers are too few or too old, and where the community is too busy just trying to survive to care about their language. But many languages are not in such a serious position. Often, where languages are seriously endangered, there are things that can be done to give new life to them. It is called 'revitalization'.

Once a community realizes that its language is in danger, it can start to introduce measures which can genuinely revitalize. The community itself must want to save its language, the culture of which it is a part must need to have a respect for minority languages. There needs to be funding, to support courses, materials, and teachers. And there need to be linguists, to get on with the basic task of putting the language down on paper. That's the bottom line: getting the language documented- recorded, analyzed, written down. People must be able to read and write if they and their language are to have a future in an increasingly computer-literate civilization.

But can we save a few thousand languages, just like that? Yes, if the will and funding were available. It is not cheap, getting linguists into the field, training local analysts, supporting the community with language resources and teachers, compiling grammars and dictionaries, writing materials for use in schools. It takes time, lots of it, to revitalize an endangered language. Conditions vary so much that it is difficult to generalize, but a figure of \$100000 a year per language cannot be far from the truth. If we devoted that amount of effort over 3 years for each of 3000 languages, we would be talking about some \$900 million.

There are some famous cases which illustrate what can be done. Welsh, alone among the Celtic languages, is not only stopping its steady decline towards extinction but showing signs of real growth. Two Language Acts protect the status of Welsh now, and its presence is increasingly in evidence wherever you travel in Wales.

On the other side of the world, Maori in New Zealand has been maintained by a system of so-called 'language nests', first introduced in 1982. These are organizations which provide children under five with a domestic setting in which they are intensively exposed to the language. The staffs are all Maori speakers from the local community. The hope is that the children will keep their Maori skills alive after leaving the nests and that as they grow older they will in turn become role models to a new generation of young children. There are cases like this all over the world. And when the reviving language is associated with a degree of political autonomy, the growth can be especially striking, as shown by Faroese, spoken in the Faroe Islands, after the islanders received a measure of autonomy from Denmark.

In Switzerland, Romansch was facing a difficult situation, spoken in five very different dialects, with small and diminishing numbers, as young people left their community for work in the German-speaking cities. The solution here was the creation in the 1980s of a unified written language for all these dialects. Romansch Grischun, as it is now called, has official status in parts of Switzerland, and is being increasingly used in spoken form on radio and television.

A language can be brought back from the very brink of extinction. The Ainu language of Japan, after many years of neglect and repression, had reached a stage where there were only eight fluent speakers left, all elderly. However, new government policies brought fresh altitudes and a positive interest in survival. Several 'semi-speakers' - people who had become unwilling to speak Ainu because of the negative altitudes by Japanese speakers- were prompted to become active speakers again. There is fresh interest now and the language is more publicly available than it has been for years.

If good descriptions and materials are available, even extinct languages can be resurrected. Kaurna, from South Australia, is an example. This language had been extinct for about a century, but had been quite well documented. So, when a strong movement grew for its revival, it was possible to reconstruct it. The revised language is not the same as the original, of course. It lacks the range that the original had, and much of the old vocabulary. But it can nonetheless act as a badge of present-day identity for its people. And as long as people continue to value it as a true marker of their identity, and are prepared to keep using it, it will develop new functions and new vocabulary, as any other living language would do.

It is too soon to predict the future of these revived languages, but in some parts of the world they are attracting precisely the range of positive attitudes and grass roots support which are the preconditions for language survival. In such unexpected but heart-warming ways might we see the grand total of languages in the world minimally increased.

### Questions 1–5

Do the following statements agree with the information in Reading Passage 1?

- YES** if the statement is true according to the passage  
**NO** if the statement contradicts the passage  
**NOT GIVEN** if there is no information about this in the passage.

1. The rate at which languages are becoming extinct has increased.
2. Research on the subject of language extinction began in the 1990s.
3. In order to survive, a language needs to be spoken by more than 100 people.
4. Certain parts of the world are more vulnerable than others to language extinction.
5. Saving language should be the major concern of any small community whose language is under threat.

### Questions 6–8

The list below gives some of the factors that are necessary to assist the revitalization of a language within a community.

Which **THREE** of the factors are mentioned by the writer of the text?

- A. the existence of related languages
- B. support from the indigenous population
- C. books tracing the historical development of the language
- D. on-the-spot help from language experts
- E. a range of speakers of different ages
- F. formal education procedures
- G. a common purpose for which the language is required.

### Questions 9–13

Match the **languages, A-F**, with the statements below which describe how a language was saved.

#### Languages

<b>A.</b> Welsh	<b>B.</b> Maori	<b>C.</b> Faroese	<b>D.</b> Romansch	<b>E.</b> Ainu	<b>F.</b> Kaurna
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9. The region in which the language was spoken gained increased independence.
10. People were encouraged to view the language with less prejudice.
11. Language immersion programmes were set up for sectors of the population.
12. A merger of different varieties of the language took place.
13. Written samples of the language permitted its revitalization.



## Reading Passage 2

You should spend about **20minutes** on Questions **14-27** which are based on Reading Passage 2 below.

### Questions 14-21

*Reading Passage 2 has eight paragraphs A-H.*

*From the list of headings below, choose the most suitable heading for each paragraph. Write the appropriate numbers (i-xi) corresponding to the different paragraphs.*

#### **List of Headings**

- (i) Obesity in animals
- (ii) Hidden dangers
- (iii) Proof of the truth
- (iv) New perspective on the horizon
- (v) No known treatment
- (vi) Rodent research leads the way
- (vii) Expert explains energy requirements of obese people
- (viii) A very uncommon complaint
- (ix) Nature or nurture
- (x) Shifting the blame
- (xi) Lifestyle change required despite new findings

**14.** Paragraph A

**15.** Paragraph B

**16.** Paragraph C

**17.** Paragraph D

**18.** Paragraph E

**19.** Paragraph F

**20.** Paragraph G

**21.** Paragraph H

## TACKLING OBESITY IN THE WESTERN WORLD

**A** Obesity is a huge problem in many Western countries and one which now attracts considerable Medical interest as researchers take up the challenge to find a “cure” for the common condition of being seriously overweight. However, rather than take responsibility for their weight, obese people have often sought solace in the excuse that they have a slow metabolism, a genetic hiccup which sentences more than half the Australian population (63% of men and 47% of women) to a life battling with their weight. The argument goes like this: it doesn't matter how little they eat, they gain weight because their bodies break down food and turn it into energy more slowly than those with a so-called normal metabolic rate.

**B** This is nonsense,' says Dr Susan Jebb from the Dunn Nutrition Unit at Cambridge, England. Despite the persistence of this metabolism myth, science has known for several years that the exact opposite is in fact true. Fat people have faster metabolisms than thin people. 'What is very clear,' says Dr Jebb, 'is that overweight people actually burn off more energy. They have more cells, bigger hearts, bigger lungs and they all need more energy just to keep going.'

**C** It took only one night, spent in a sealed room at the Dunn Unit to disabuse one of their parents of the beliefs of a lifetime: her metabolism was fast, not slow. By sealing the room and measuring the exact amount of oxygen she used, researchers were able to show her that her metabolism was not the culprit. It wasn't the answer she expected and probably not the one she wanted but she took the news philosophically.

**D** Although the metabolism myth has been completely disproved, science has far from discounted our genes as responsible for making us whatever weight we are, fat or thin. One of the world's leading obesity researchers, geneticist Professor Stephen O'Rahilly, goes so far as to say that we are on the threshold of a complete change in the way we view not only morbid obesity, but also everyday overweight. Prof. O'Rahilly's groundbreaking work in Cambridge has proven that obesity can be caused by our genes. 'These people are not weak-willed, slothful or lazy,' says Prof. O'Rahilly. 'They have a medical condition due to a genetic defect and that causes them to be obese.'

**E** In Australia, the University of Sydney's Professor Ian Caterson says that while genetic defects may be rare, many people probably have minor genetic variations that combine to dictate weight and are responsible for things such as how much we eat, the amount of exercise we do and the amount of energy we need. When you add up all these little variations, the result is that some people are genetically predisposed to putting on weight. He says while the fast/slow metabolism debate may have been settled, that doesn't mean some other subtle change in the metabolism gene won't be found in overweight people. He is confident that science will, eventually, be able to cure some forms of overweight and obese people to lose weight is a change of diet and an increase in exercise.

**F** Despite the \$500 million a year the Australians spend trying to lose weight and the \$830 million it costs the community in health care, obesity is at epidemic proportions here, as it is in all Western nations. Until recently, research and treatment for obesity had concentrated on behavior modification, drugs to decrease appetite and surgery. How the drugs worked was often not understood and may caused severe side effects and even death in some patients. Surgery for obesity has also claimed many lives.

**G** It has long been known that a part of the brain called the hypothalamus is responsible for regulating hunger, among other things. But it wasn't until 1994 that Professor Jeffrey Friedman from Rockefeller University in the US sent science in a new direction by studying an obese mouse. Prof. Friedman found that unlike its thin brothers, the fat mouse did not produce a hitherto unknown hormone called leptin. Manufactured by the fat cells, leptin acts as a messenger, sending signals to the hypothalamus to turn off the appetite. Previously, the fat cells were thought to be responsible simply for storing fat. Prof. Friedman gave the fat mouse leptin and it lost 30% of its body weight in 2weeks.

**H** On the other side of the Atlantic, Prof. O'Rahilly read about this research with great excitement. For many months, two blood samples had lain in the bottom of his freezer, taken from two extremely obese young cousins. He hired a doctor to develop a test for leptin in human blood, which eventually resulted in the discovery that neither of the children's blood contained the hormone. When one cousin was given leptin, she lost a stone in weight and Prof. O'Rahilly made medical history. Here was the first proof that genetic defect could cause obesity in humans. But leptin deficiency turned out to be an extremely rare condition and there is a lot more research to be done before the 'magic' cure for obesity is ever found.

## Questions 22-27

Complete the summary below. Choose **ONE** or **TWO** words from the word list provided below for each question. Write the answers in the space provided.

### Summary

People with a .....**22**..... problem often try to deny responsibility. They do this by seeking to blame their .....**23**..... for the fact that they are overweight and erroneously believe that they use .....**24**..... energy than thin people to stay alive. However, recent research has shown that a .....**25**..... problem can be responsible for obesity as some people seem programmed to .....**26**..... more than others. The new research points to a shift from trying to change people's .....**27**..... to seeking an answer to the problem in the laboratory.

### Word List

weight	exercise	sleep
mind	bodies	exercise
metabolism	more	genetic
less	physical	consume
behavior	use	mental

### **READING PASSAGE 3**

You should spend about **20 minutes** on Questions **28-40** which are based on Reading Passage 3 below.

## **Worms put new life into Derelict Site**

*Poisoned soil at an old steelworks is being cleansed by thousands of worms, writes Chakraborty.*

THOUSANDS of deep-barrowing earthworms are to help turn the long-derelict site of a steelworks into woodland and a renewable energy park.

As part of a pioneering low-cost plan to reclaim the site of the former Hallside steelworks at Cambuslang near Glasgow, worms are being used to accelerate the process of soil regeneration and to transform the land, over time, into an attractive and financially productive site.

Hallside's closure in 1979 put an end to more than 100 years of steel production. The surrounding land had become heavily compacted and was too contaminated with heavy metals such as chromium, cadmium and lead to support any kind of brick and mortar development.

The site's 30 hectares were left abandoned until 1990, when a rescue plan put together by local landscaping and earthmoving company, HL Banks, and the regional developer, Scottish Greenbelt, was approved by local authorities.

Now the site has been covered by a two-metre layer of partially treated sewage material which has been mixed with coal mine waste. This will be converted into usable soil by about 21,000 *Lubricus terrestris* (garden lobworms) and *Aporrectodea longa* (black-headed worms) that have been let loose on the site.

The specially raised hermaphrodites, which are self-impregnating, will spend the next five to ten years chewing their way through the topping layer to create a soil structure able to sustain long-term plant growth. Without them, the process could take up to 60 years.

Researchers at Bell College of Technology in nearby Hamilton examined the use of earthworms in land regrading, and found that even in the hostile mixture of coal-tip waste and partially treated sewage, earthworms were able to speed up the process of soil recomposition.

They selected different varieties of deeper-burrowing earthworm species, whose bulk feeding and casting actions, as well as their ability to improve the mineral content of soil, would increase the rate of reformulation much faster than the natural processes.

Sean Ince, of Bell's department of biology, says: 'The idea is that earthworms will contribute in a cumulative way to further soil binding, and that they will aerate and add nitrogen to the soil covering the Hallside site.'

At the same time, Scottish Greenbelt has begun planting the area with 250,000 trees- including willow and alder- specially selected for their ability to grow on degraded land.

These will have the dualfunction of extracting contaminants from the soil through their root systems, and being harvested for wood burning or chipboard manufacture.

By using the cash raised from wood harvesting, David Craven, Director of Scottish Greenbelt says he expects Hallside to be self-financing.

'The first tranche of trees was planted in April and they are now over six feet tall, despite dry weather through the summer,' he says. 'The fields are being planted on a four-year rotation basis and will be used to help us meet our costs.'

Craven says the rest of land bio-remediation - the labour-intensive process of removing soil for chemical and bacterial cleansing - could have been more than £30m.

At Bell College, Ince says: 'There's a whole legacy of toxic soil contamination going back many years. There is physical degradation of the soil as well as contamination from metals, including lead, chromium and arsenic.'

Sampling of the soil at regular intervals over the next few years will give an indication of the level of contaminants. Within less than 20 years the land could be re-integrated into the community.

Hopes of a successful outcome at Hallside have paved the way for similar regeneration plans for the nearby Gartoosh steelworks and at Glengarnock in Ayrshire.

### **Questions 28-32**

*Choose the appropriate letters A-D for questions 28-32.*

- 28.** The Hallside site has been
- A. turned into a steelworks from a woodland and an energy park.
  - B. in use as an energy park.
  - C. disused for a long period of time.
  - D. disused for a short period of time.
- 29.** After more than one hundred years of steel production at Hallside,
- A. the land could not be used for anything.
  - B. it was impossible to use the land to build on.
  - C. the land could then be built on.
  - D. the land could be used for any purpose.
- 30.** The plan to reclaim Hallside was proposed by
- A. Scottish Greenbelt and the regional developer.
  - B. local authorities.
  - C. a local landscaping company and HL banks.
  - D. Scottish Greenbelt and HL Banks.
- 31.** In the conversion of the soil at the Hallside site,
- A. two types of worms were being used.
  - B. three types of worms were being used.
  - C. many types of worms were being used.
  - D. thousands of different types of worms were being used.

32. The soil regeneration at the Hallside site will take
- A. 60 years.
  - B. between 5 and 10 years.
  - C. up to 60 years.
  - D. less than five years.

**Questions 33-36**

Choose **ONE or TWO WORDS** from *Reading Passage* for each answer.

33. In research at Bell College, worms were used that quickened.....
34. The Bell researchers chose worms that would convert contaminated soil more rapidly than the .....
35. The soil at Hallside will be enriched by adding air and .....
36. Contaminants will be removed from the soil by .....

**Questions 37-40**

Choose **ONE phrase** from the **list of phrases A-H** to complete each of the following sentences.

37. The Hallside site is expected to .....
38. Bio-remediation at Hallside could .....
39. Within 20 years, the land at Hallside could .....
40. Similar regeneration plans may .....

- A** still be contaminated.
- B** be in use again by the community.
- C** work better elsewhere.
- D** take place at other steelworks.
- E** have cost millions of pounds.
- F** have been labour intensive.
- G** pay for itself.
- H** cost more than bio-remediation.

## HOME PRACTICE PASSAGES

### Reading Passage 1

You should spend about **25minutes** on Questions **1-15** which are based on Reading Passage 1 below.

## **BOOK - CARRYING BEHAVIOUR**

Psychologists have long observed that women and men perform certain physical actions in different ways. One such action is the carrying of books. Howard and White (1966) maintain that there is a 'masculine' style and a 'feminine' style of book-carrying and that one's sex determines which of these styles one will use.

In observations of over 3600 university students in North and South America, Howard and White recorded five styles of book-carrying. These styles, labeled 'A', 'B', 'C', 'D', and 'E', were then categorized into two main types: Type I and II. Howard and White's categorizations are given in detail in the box on the below.

### **Type I**

- A. The books cover part of the front of the body. The books short edges are parallel to the ground and rest against the body. One arm is wrapped around the books, with the elbow bent and the fingers wrapped around the books long edges.
- B. The same as A above, except both arms are wrapped around the books, which are usually more centered in front of the body.

### **Type II**

- C. The books are held at the side of the body and so do not cover any part of the front. The arms are kept straight and the books are held, in one hand, from above. The books long edges are parallel to the ground.
- D. As C above, but the books are held from below, with the fingers wrapped around the lower edges.
- E. As C above, except the elbows are bent and the books are raised along the side of the body.

### **Other**

Positions characteristic of neither Type I nor Type II.



Howard and White's findings were that men and women differ markedly in the way they carry books. They reported that some 82% of females use Type I methods, while 16% use Type II. For men, Type II methods were used by 96% whereas only 3% used the 'feminine' style.

A smaller study in the UK by Haldern and Matthews (1969) confirmed the distinction in book-carrying styles, and went on to explain this difference in terms of male and female body shape and strength. The researchers claimed morpho-anatomical features, such as hip and shoulder width, as well as the strength of the fingers and hands, were the main determinants of carrying styles.

Subsequent research into the relationship of age to carrying behavior (Namimitsu & Matthews, 1971) found that there was little or no difference between the sexes among kindergarten children, and that a large majority of children of either sex carried books in the manner of Type II. Wilson (1972) found that by primary school, differences began to emerge along the lines of Howard and White's 'feminine' and 'masculine' styles - that is, girls' carrying positions began to diverge from boys'. Children in the 14 - 16 age group were found to display the greatest difference in book-carrying behavior, with some 91% of girls using Type I methods (Agfitz, 1972a). In his review of the research done up to that time, Wilson (1976) stressed that in all the studies into developmental aspects of the behavior, male carrying behavior remained broadly consistent throughout the age groups, including the university students who were the subjects of Howard and White's (1966) study. Studies of older adult age groups showed a decreasing, yet enduring, gap in styles as people aged. With increasing age, increasing numbers of women were shown to abandon Type I in favor of Type II (Agfitz, 1972b).

Looking at other possible explanations for these differences, Agfitz (1973), offered the notion of social pressure on children to conform to behaviors 'typical' of their sex. This is especially the case in the context of secondary school, where children are pressured by their fellow students to conform to behaviors that society considers normal.

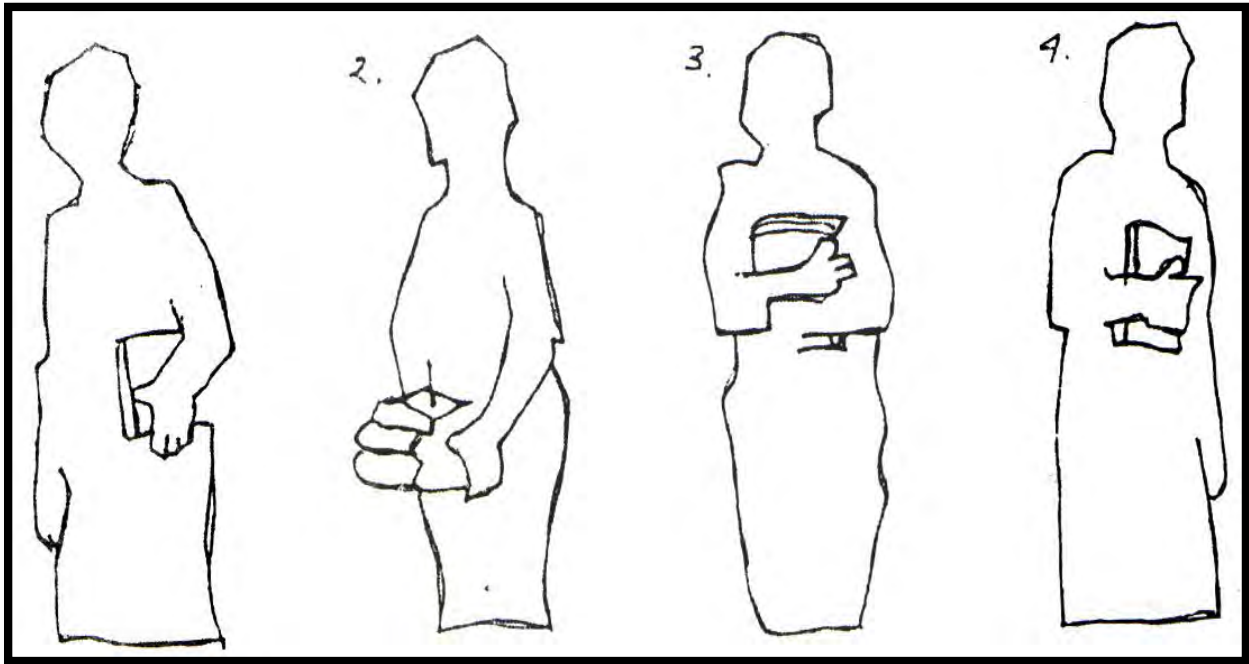
In the early 1990s, this notion of book-carrying behavior as gender-specific came under review. Vilberberg and Zhou (1991), in making the first large-scale observational study since Howard and White (1966), found that women of university age and older were as likely to use Type II methods as Type I. Observing some 3750 university students and adult public-library users in Holland and Belgium, the researchers found that while 92% of males exhibited Type I behavior, only 52% of females used Type I methods. Some 47% carried books in the manner of Type II. Most interestingly, of this latter proportion, more than three quarters used style 'E'.

The notion of 'feminine' and 'masculine' book carrying styles was suddenly thrown into doubt, as Chadamitswky (1993) and others argued that carrying behavior could not be claimed to be gender specific if females were not consistent in the styles they displayed. Male carrying behavior, even in the Vilberberg and Zhou study, remained a virtual constant, and so could be labeled 'typical' for males. But because this style was well shared by females, it could not be called 'masculine'. Chadamitswky went on to argue that the original interpretation of Howard and White's (1966) study that there were clear 'feminine' and 'masculine' styles - set the course of subsequent research in that direction. Future research, he argued, should look not at why females and males display different book-carrying behaviors, but why males are uniform and females are more apt to vary.

### Questions 1-4

Classify the following book carrying styles as:

- A Style 'A'
  - B Style 'B'
  - C Style 'C'
  - D Style 'D'
  - E Style 'E'
- OR
- O Other



### **Questions 5-11**

*Below is a list of research conclusions mentioned in Reading Passage 1. Indicate which researcher(s) was/were responsible for each research conclusion.*

#### **Research conclusions**

5. The influence on children to fit into socially accepted roles may contribute to differences in carrying behavior,
6. Young teenage girls were most likely to use Type 1 methods.
7. 'Feminine' and 'masculine' carrying styles may be accounted for by anatomical differences in female and male bodies.
8. There is no consistent male - female difference in book-carrying behavior in early - childhood.
9. Males of all ages appear to be consistent in their carrying behavior.
10. Close to half of women carry in such a way that books cover no part of the front of their body.
11. Older women are less likely than younger women to display Type I methods.

### **Questions 12-15**

*Do the following statements reflect the claims of the writer in Reading Passage?*

- YES**                    if the statement reflects the writer's claims  
**NO**                      if the statement contradicts the writer  
**NOT GIVEN**        if there is no information about this in the passage.

12. Researchers in the 1990s suggested that the social rather than physical factors better explain differences in book-carrying style.
13. In the Vilberberg and Zhou (1991) study, the majority of women using Type II methods used style 'E'.
14. Vilberberg and Zhou's (1991) findings weaken Howard and White's (1966) conclusions about gender-specific book-carrying behavior.
15. Chadamitsky (1993) suggested that, in the future, research ought to be directed at why both male and female book-carrying behaviors vary.

## **READING PASSAGE 2**

You should spend about **20minutes** on Questions **16-27** which are based on Reading Passage 2 below.

# **JUPITER'S BRUISES**

***[In 1994, the comet Shoemaker-Levy 9 collided with the planet Jupiter, causing great excitement in the world of astronomy. The article which follows was written after the first impact.]***

Shoemaker-Levy 9 has plunged into Jupiter and the Hubble Space Telescope has moved away to look at other objects in space. Amateur astronomers, however, are still watching Jupiter to see what bruises were left on the mighty planet by the comet crash of 1994. There was tremendous excitement in astronomical circles during the collision of comet and planet. It is now time to see what has been learned from this impact.

One question which may never be answered: Was Shoemaker-Levy 9 really a comet or was it an asteroid instead? Comets tend to be a mixture of ice, rock and dust, along with other substances, like carbon monoxide, that evaporate quickly to form a halo and a tail. Scientists studying the chemical composition of the spots in Jupiter where Shoemaker-Levy 9 hit thought they might find evidence of water and oxygen, two of the expected products when an icy comet vaporizes. But except for one unconfirmed report, researchers have found only ammonia, hydrogen sulphide and sulphur gas.

Asteroids are rockier than comets. Yet it is possible for an asteroid to have a halo or a tail, made mostly of dust. Says Hal Weaver of the Space Telescope Institute: "The only real evidence that Shoemaker-Levy 9 was a comet is that it broke apart and we've never seen that in an asteroid. But maybe this was a fragile asteroid."

Amateur astronomer David Levy, who with Eugene and Carolyn Shoemaker discovered Shoemaker-Levy 9, points out that comets were originally distinguished by their appearance. They are objects that look like fuzzy stars with tails and in any previous century astronomers would have called this discovery a comet. On that basis, argues Levy, "Shoemaker-Levy 9 is a comet, period."

The apparent absence of water at the impact sites provide a clue about how far the Shoemaker-Levy 9 fragments penetrated Jupiter's atmosphere before exploding. Theorists think that a layer of water vapor lies some 95km below the visible cloud tops; above the vapor layer, about 50km down, are clouds considered to consist of a sulphur compound. Since no water seems to have been stirred up, the explosion probably took place in the presumed sulphide layer.

If researchers confirm that the sulphur rose up from Jupiter, it will be "a major discovery," says University of Arizona astronomer Roger Yelle. "We've always believed that much of the color in Jupiter's clouds comes from sulphur compounds, but we've never detected them. "

No one knows why the points of impact are so dark, but it is clear that they are very high up in Jupiter's atmosphere, since the planet's stripes can be seen through them. Astronomers believe the collisions will provide an opportunity to study the winds above Jupiter's cloud tops. The mark left by the first impact is already starting to spread around. There are also hints of seismic waves- ripples that may have travelled all the way to a dense layer of liquid hydrogen thousands of kilometers down and then bounced back up to the surface, creating rings half the size of the planet's visible face. These waves may offer clues to Jupiter's internal structure.

The spots that were made by the collision will undoubtedly blow away eventually, but it's much too soon to tell if there will be any permanent changes in Jupiter. There is still every chance that the impacts, especially from the four fragments that hit in nearly the same place, will destabilize the atmosphere and create a new, permanent cyclone like Jupiter Great Red Spot.

It's also possible that the show isn't quite over. Theorists using a computer model argue that the debris has lagged behind the original 21 major fragments. These stragglers, they predict, will keep hitting Jupiter for months to come. Unlike the previous fragments, the latecomers will smash into the near side of the planet, giving astronomers a chance to watch some strikers directly. Is the theory plausible? Says one astronomer, "We've had so many surprises from Shoemaker-Levy 9 already, that I wouldn't rule anything out".

### **Questions 16-22**

*Do the following statements agree with the information in Reading Passage 2?*

- |                  |   |
|------------------|---|
| <b>YES</b>       | if the statement is true according to the passage     |
| <b>NO</b>        | if the statement contradicts the passage              |
| <b>NOT GIVEN</b> | if there is no information about this in the passage. |

16. Evidence so far indicated that further study of Shoemaker-Levy 9 will be worthwhile.
17. There are no physical differences between asteroids and comets.
18. The observation of Shoemaker-Levy 9 was an immensely expensive undertaking.
19. David Levy, being an amateur astronomer, was not taken seriously.
20. The dark points of impact indicate that there is no water on Jupiter.
21. It is now possible to perform detailed studies of Jupiter's internal structure.
22. It is possible that more impacts have occurred since this article was written.

**Questions 23-27**

Complete the sentences below with words taken from the Reading Passage. Use **NO MORE THAN THREE WORDS** for each answer.

- 23. The comet was observed using the .....
- 24. A comet's tail is usually made up of substances that evaporate quickly such as .....
- 25. Researchers had expected to see evidence of ..... at the impact site, showing the comet's composition.
- 26. The presence of sulphur compounds may account for the ..... of Jupiter's clouds.
- 27. The destabilized atmosphere may lead to the formation of another permanent ..... on Jupiter.