

# IELTSFever Academic IELTS Reading Test 117

## Reading Passage 1

*You should spend about 20 minutes on Questions 1-13, which are based on the IELTSFever Academic IELTS Reading Test 115 Reading Passage The Sense for flavour<sup>2</sup> below.*

### The Sense for flavour<sup>2</sup>

**{A}** Scientists now believe that human beings acquired the sense of taste as a way to avoid being poisoned. Edible plants generally taste sweet; deadly ones, bitter. Taste is supposed to help us differentiate food that's good for us from food that's not. The taste buds on our tongues can detect the presence of half a dozen or so basic tastes, including: sweet, sour, bitter, salty, and umami (a taste discovered by Japanese researchers, a rich and full sense of deliciousness triggered by amino acids in foods such as shellfish, mushrooms, potatoes and seaweed). Tastebuds offer a limited means of detection, however, compared with the human olfactory system, which can perceive thousands of different chemical aromas. Indeed, 'flavour' is primarily the smell of gases being released by the chemicals you've just put in your mouth. The aroma of food can be responsible for as much as 90% of its flavour.

**{B}** The act of drinking, sucking or chewing a substance releases its volatile gases. They flow out of the mouth and up the nostrils, or up the passageway at the back of the mouth, to a thin layer of nerve cells called the olfactory epithelium, located at the base of the nose, right between the eyes. The brain combines the complex smell signals from the epithelium with the simple taste signals from the tongue, assigns a flavour to what's in your mouth, and decides if it's something you want to eat.

**{C}** Babies like sweet tastes and reject bitter ones; we know this because scientists have rubbed various flavours inside the mouths of infants and then recorded their facial reactions. A person's food preferences, like his or her personality, are formed during the first few years of life, through a process of socialisation. Toddlers can learn to enjoy hot and spicy food, bland health food, or fast food, depending upon what the people around them eat. The human sense of smell is still not fully understood. It is greatly affected by psychological factors and expectations. The mind filters out the overwhelming majority of chemical aromas that surround us, focusing intently on some, ignoring others. People can grow accustomed to bad smells or good smells; they stop noticing what once seemed overpowering.

**{D}** Aroma and memory are somehow inextricably linked. A smell can suddenly evoke a long-forgotten moment. The flavours of childhood foods seem leave an indelible mark, and adults often return to them, without always knowing why. These 'comfort foods' become a source of pleasure and reassurance a fact that fast-food chains work hard to promote Childhood

memories of Happy Meals can translate into frequent adult visits to McDonalds', like those of the chain's 'heavy users', the customers who eat there four or five times a week.

{E} The human craving for flavour has been a large unacknowledged and unexamined force in history. Royal empires have been built, unexplored lands have been traversed, great religions and philosophies have been forever changed by the spice trade. In 1492, Christopher Columbus set sail in order to try to find new seasonings and thus to make his fortune with this most desired commodity of that time. Today, the influence of flavour in the world marketplace is no less decisive. The rise and fall of corporate empires - soft-drink companies, snack-food companies and fast-food chains - is frequently determined by how their products taste.

{F} The flavour industry emerged in the mid-1800s, as processed foods began to be manufactured on a large scale. Recognising the need for flavour additives, the early food processors turned to perfume companies that had years of experience working with essential oils and volatile aromas. The great perfume houses of England, France and the Netherlands produced many of the first flavour compounds. In the early part of the 20th century, Germany's powerful chemical industry assumed the lead in flavour production. Legend has it that a German scientist discovered methyl anthranilate, one of the first artificial flavours, by accident while mixing chemicals in his laboratory. Suddenly, the lab was filled with the sweet smell of grapes. Methyl anthranilate later became the chief flavouring compound of manufactured grape juice.

{G} The quality that people seek most of all in a food, its flavour, is usually present in a quantity too infinitesimal to be measured by any traditional culinary terms such as ounces or teaspoons. Today's sophisticated spectrometers, gas chromatographs and headspace vapour analysers provide a detailed map of a food's flavour components, detecting chemical aromas in amounts as low as one part per billion. The human nose, however, is still more sensitive than any machine yet invented. A nose can detect aromas present in quantities of a few parts per trillion. Complex aromas, such as those of coffee or roasted meat, may be composed of gases from nearly a thousand different chemicals. The chemical that provides the dominant flavour of bell pepper can be tasted in amounts as low as 0.02 parts per billion; one drop is sufficient to add flavour to the amount of water needed to fill five average-size swimming pools

### Questions 1 - 5

*Do the following statements agree with the information given in The Passage ? In boxes 1 - 5 on answer sheet write*

TRUE	if the statement is True
FALSE	if the statement is false
NOT GIVEN	If the information is not given in the passage



- (1) The brain determines which aromas we are aware of.
- (2) The sense of taste is as efficient as the sense of smell.
- (3) Personal tastes in food are developed in infancy.
- (4) Christopher Columbus found many different spices on his travels.
- (5) In the mid 1880s ,man-made flavours were originally invented on purpose.

### Questions 6-11

Complete the sentence below. Choose **ONE word** from The Passage for each answer. Write your answers in boxes 6 - 11 on your answer sheet

It is thought that the sense of taste was 6).....in order to 7).....the foods which are harmless to us from those that are not 8)..... The sense of smell, which gives us the flavour we detect in our food, helps us to take pleasure in our food. Indeed this 9) .....for flavour was, in the past, the reason why so many explorers ventured to distant lands to bring back new 10 .....which were greatly sought after in Europe. Here they were used in cooking to enhance the usual 11).....and unappetizing dishes eaten by rich and poor alike.

### Question 12-13

Write **NO MORE THAN TWO WORDS** from Reading Passage 1 for each answer.

Write your answers in boxes 12-13 on your answer sheet

- (12) We associate certain smells with the past as they are .....
- (13) Modern technology is able to help determine the minute quantities of.....found in food.

### Reading Passage 2

You should spend about 20 minutes on Questions 14-27, which are based on the IELTSFever Academic IELTS Reading Test 115 Reading Passage Memory and Age below.

## Memory and Age

**{A}** Aging, it is now clear, is part of an ongoing maturation process that all our organs go through. "In a sense, aging is keyed to the level of vigor of the body and the continuous interaction between levels of body activity and levels of mental activity," reports Arnold B. Scheibel, M.D., whose very academic title reflects how once far-flung domains now converge on the mind and the brain. Scheibel is professor of anatomy, cell biology, psychiatry, and behavioral sciences at the University of California at Los Angeles, and director of the university's Brain Research Institute. Experimental evidence has backed up popular assumptions that the aging mind undergoes decay analogous to that of the aging body. Younger monkeys, chimps, and lower animals consistently outperform their older colleagues on memory tests. In humans, psychologists concluded, memory and other mental functions deteriorate over time because of inevitable organic changes in the brain as neurons die off. Mental decline after young adulthood appeared inevitable.

**{B}** Equipped with imaging techniques that capture the brain in action, Stanley Rapoport, Ph.D., at the National Institutes of Health, measured the flow of blood in the brains of old and young people as they went through the task of matching photos of faces. Since blood flow reflects neuronal activity, Rapoport could compare which networks of neurons were being used by different subjects. "Even when the reaction times of older and younger subjects were the same, the neural networks they used were significantly different. The older subjects were using different internal strategies to accomplish the same result in the same time," Rapoport says. Either the task required greater effort on the part of the older subjects or the work of neurons originally involved in tasks of that type had been taken over by other neurons, creating different networks.

**{C}** At the Georgia Institute of Technology, psychologist Timothy Salthouse, Ph.D., compared a group of very fast and accurate typists of college age with another group in their 60s. Since reaction time is faster in younger people and most people's fingers grow less nimble with age, younger typists might be expected to tap right along while the older ones fumble. But both typed 60 words a minute. The older typists, it turned out, achieved their speed with cunning little strategies that made them far more efficient than their younger counterparts: They made fewer finger movements, saving a fraction of a second here and there. They also read ahead in the text. The neural networks involved in typing appear to have been reshaped to compensate for losses in motor skills or other age changes.

**{D}** "When a rat is kept in isolation without playmates or objects to interact with, the animal's brain shrinks, but if we put that rat with 11 other rats in a large cage and give them an assortment of wheels, ladders, and other toys, we can show--after four days-- significant differences in its brain," says Diamond, professor of integrative biology. Proliferating dendrites first appear in the visual association areas. After a month in the enriched environment, the whole cerebral cortex has expanded, as has its blood supply. Even in the enriched environment, rats get bored unless the toys are varied. "Animals are just like we are. They need stimulation," says Diamond.



**{E}** One of the most profoundly important mental functions is memory--notorious for its failure with age. So important is memory that the Charles A. Dana Foundation recently spent \$8.4 million to set up a consortium of leading medical centers to measure memory loss and aging through brain imaging technology, neurochemical experiments, and cognitive and psychological tests. One thing, however, is already fairly clear--many aspects of memory are not a function of age at all but of education. Memory exists in more than one form. What we call knowledge--facts--is what psychologists such as Harry P. Bahrick, Ph.D., of Ohio Wesleyan University calls semantic memory. Events, conversations, and occurrences in time and space, on the other hand, make up episodic or event memory, which is triggered by cues from the context. If you were around in 1963 you don't need to be reminded of the circumstances surrounding the moment you heard that JFK had been assassinated. That event is etched into your episodic memory.

**{F}** When you forget a less vivid item, like buying a roll of paper towels at the supermarket, you may blame it on your aging memory. It's true that episodic memory begins to decline when most people are in their 50s, but it's never perfect at any age. "Every memory begins as an event," says Bahrick. "Through repetition, certain events leave behind a residue of knowledge, or semantic memory. On a specific day in the past, somebody taught you that two and two are four, but you've been over that information so often you don't remember where you learned it. What started as an episodic memory has become a permanent part of your knowledge base." You remember the content, not the context. Our language knowledge, our knowledge of the world and of people, is largely that permanent or semipermanent residue.

**{G}** Probing the longevity of knowledge, Bahrick tested 1,000 high school graduates to see how well they recalled their algebra. Some had completed the course as recently as a month before, others as long as 50 years earlier. He also determined how long each person had studied algebra, the grade received, and how much the skill was used over the course of adulthood. Surprisingly, a person's grasp of algebra at the time of testing did not depend on how long ago he'd taken the course--the determining factor was the duration of instruction. Those who had spent only a few months learning algebra forgot most of it within two or three years.

**{H}** In another study, Bahrick discovered that people who had taken several courses in Spanish, spread out over a couple of years, could recall, decades later, 60 percent or more of the vocabulary they learned. Those who took just one course retained only a trace after three years. "This long-term residue of knowledge remains stable over the decades, independent of the age of the person and the age of the memory. No serious deficit appears until people get to their 50s and 60s, probably due to the degenerative processes of aging rather than a cognitive loss."

**{I}** "You could say metamemory is a byproduct of going to school," says psychologist Robert Kail, Ph.D., of Purdue University, who studies children from birth to 20 years, the time of life when mental development is most rapid. "The question-and-answer process, especially exam-taking, helps children learn--and also teaches them how their memory works. This may be one reason why, according to a broad range of studies in people over 60, the better educated a person is, the more likely they are to perform better in life and on psychological tests. A group of adult novice chess players were compared with a group of child experts at the game. In tests of

their ability to remember a random series of numbers, the adults, as expected, outscored the children. But when asked to remember the patterns of chess pieces arranged on a board, the children won. "Because they'd played a lot of chess, their knowledge of chess was better organized than that of the adults, and their existing knowledge of chess served as a framework for new memory," explains Kail.

**{J}** Specialized knowledge is a mental resource that only improves with time. Crystallized intelligence about one's occupation apparently does not decline at all until at least age 75, and if there is no disease or dementia, may remain even longer. Special knowledge is often organized by a process called "chunking." If procedure A and procedure B are always done together, for example, the mind may merge them into a single command. When you apply yourself to a specific interest--say, cooking--you build increasingly elaborate knowledge structures that let you do more and do it better. This ability, which is tied to experience, is the essence of expertise. Vocabulary is one such specialized form of accrued knowledge. Research clearly shows that vocabulary improves with time. Retired professionals, especially teachers and journalists, consistently score higher on tests of vocabulary and general information than college students, who are supposed to be in their mental prime.

### Questions 14-17

*Choose the correct letter, A, B, C or D.*

*Write your answers in boxes 14-17 on your answer sheet.*

**Question 14** What does the typist's experiment show in the passage?

- (A) Old people reading ability is superior
- (B) Losses of age is irreversible
- (C) Seasoned tactics made elders more efficient
- (D) Old people performed poorly in driving test

**Question 15** Which is correct about rat experiment?

- (A) Different toys have different effect for rats
- (B) Rat's brain weight increased in both cages.
- (C) Isolated rat's brain grows new connections
- (D) Boring and complicated surroundings affect brain development

**Question 16** What can be concluded in the chess game of a children's group?

- (A) They won game with adults.
- (B) Their organization of chess knowledge is better



- (C) Their image memory is better than adults  
(D) They used different part of brain when chassing

**Question 17** What is the author's purpose of using "vocabulary study" at the end of the passage?

- (A) Certain people are sensitive to vocabularies while others aren't  
(B) Teachers and professionals won by their experience  
(C) Vocabulary memory as a crystallized intelligence is hard to decline  
(D) Old people use their special zone of brain when study

### Questions 18-23

Complete the following summary of the paragraphs of Reading Passage, using **no more than two words** from the Reading Passage for each answer. Write your answers in boxes 18-23 on your answer sheet.

It's long been known that \_\_\_\_\_ **18** \_\_\_\_\_ declined with age. Charles A. Dana foundation invested millions of dollars to test memory decline. They used advanced technology, neurochemical experiments and ran several cognitive and \_\_\_\_\_ **19** \_\_\_\_\_ experiments. Bahrick called one form " \_\_\_\_\_ **20** \_\_\_\_\_ ", which describes factual knowledge. Another one called " \_\_\_\_\_ **21** \_\_\_\_\_ " contains events in time and space format. He conducted two experiments toward knowledge memory's longevity, he asked 1000 candidates some knowledge of \_\_\_\_\_ **22** \_\_\_\_\_ , some could even remember it decades ago. Second research of Spanish courses found that multiple course participants could remember more than half of \_\_\_\_\_ **23** \_\_\_\_\_ they learned after decades, whereas single course taker only remembered as short as 3 years.

### Questions 24-27

Use the information in the passage to match the people (listed A-F) with opinions or deeds below. Write the appropriate letters A-F in boxes 24-27 on your answer sheet.

- (A) Harry P. Bahrick

(B) Arnold B. Scheibel

(C) Marion Diamond

(D) Timothy Salthouse

(E) Stanley Rapport

(F) Robert Kail

(24) Examined both young and old's blood circulation of brain while testing,

(25) Aging is a significant link between physical and mental activity.

(26) Some semantic memories of an event fade away by repetition.

(27) Rat's brain developed when put in a diverse environment.

### Reading Passage 3

*You should spend about 20 minutes on Questions 28-40, which are based on the IELTSFever Academic IELTS Reading Test 115 Reading Passage Company Innovation below.*

#### Company Innovation

{A} IN A scruffy office in midtown Manhattan, a team of 30 artificial intelligence programmers is trying to simulate the brains of an eminent sexologist, a well-known dietician, a celebrity fitness trainer and several other experts. Umagic Systems is a young firm, setting up websites that will allow clients to consult the virtual versions of these personalities. Subscribers will feed in details about themselves and their goals; Umagic's software will come up with the advice that the star expert would give. Although few people have lost money betting on the neuroses of the American consumer, Umagic's prospects are hard to gauge (in ten years' time, consulting a computer about your sex life might seem natural, or it might seem absurd). But the company and others like it are beginning to spook large American firms, because they see such half-barmy "innovative" ideas as the key to their own future success.

{B} Innovation has become the buzz-word of American management. Firms have found that most of the things that can be outsourced or re-engineered have been (worryingly, by their competitors as well). The stars of American business tend today to be innovators such as Dell, Amazon and Wal-Mart, which have produced ideas or products that have changed their industries.

{C} A new book by two consultants from Arthur D. Little records that, over the past 15 years, the top 20% of firms in an annual innovation poll by Fortune magazine have achieved double the shareholder returns of their peers. Much of today's merger boom is driven by a desperate search for new ideas. So is the fortune now spent on licensing and buying others' intellectual property. According to the Pasadena-based Patent & Licence Exchange, trading in intangible



assets in the United States has risen from \$15 billion in 1990 to \$100 billion in 1998, with an increasing proportion of the rewards going to small firms and individuals.

**{D}** And therein lies the terror for big companies: that innovation seems to work best outside them. Several big established "ideas factories", including 3M, Procter & Gamble and Rubbermaid, have had dry spells recently. Gillette spent ten years and \$1 billion developing its new Mach 3 razor; it took a British supermarket only a year or so to produce a reasonable imitation. "In the management of creativity, size is your enemy," argues Peter Chernin, who runs the Fox TV and film empire for News Corporation. One person managing 20 movies is never going to be as involved as one doing five movies. He has thus tried to break down the studio into smaller units even at the risk of incurring higher costs.

**{E}** It is easier for ideas to thrive outside big firms these days. In the past, if a clever scientist had an idea he wanted to commercialise, he would take it first to a big company. Now, with plenty of cheap venture capital, he is more likely to set up on his own. Umagic has already raised \$5m and is about to raise \$25m more. Even in capital-intensive businesses such as pharmaceuticals, entrepreneurs can conduct early-stage research, selling out to the big firms when they reach expensive, risky clinical trials. Around a third of drug firms' total revenue now comes from licensed-in technology.

**{F}** Some giants, including General Electric and Cisco, have been remarkably successful at snapping up and integrating scores of small companies. But many others worry about the prices they have to pay and the difficulty in hanging on to the talent that dreamt up the idea. Everybody would like to develop more ideas in-house. Procter & Gamble is now shifting its entire business focus from countries to products; one aim is to get innovations accepted across the company. Elsewhere, the search for innovation has led to a craze for "intrapreneurship"—devolving power and setting up internal ideas-factories and tracking stocks so that talented staff will not leave.

**{G}** Some people think that such restructuring is not enough. In a new book Clayton Christensen argues that many things which established firms do well, such as looking after their current customers, can hinder the sort of innovative behaviour needed to deal with disruptive technologies. Hence the fashion for cannibalisation, setting up businesses that will actually fight your existing ones. Bank One, for instance, has established Wingspan, an Internet bank that competes with its real branches (see article). Jack Welch's Internet initiative at General Electric is called "Destroyyourbusiness.com".

**{H}** Nobody could doubt that innovation matters. But need large firms need to be quite so pessimistic? A recent survey of the top 50 innovations in America, by Industry Week, a journal, suggested that ideas are as likely to come from big firms as from small ones. Another sceptical note is sounded by Amar Bhidé, a colleague of Mr Christensen's at the Harvard Business School and the author of another book on entrepreneurship. Rather than having to reinvent themselves, big companies, he believes, should concentrate on projects with high costs and low uncertainty, leaving those with low costs and high uncertainty to small entrepreneurs. As ideas mature and the risks and rewards become more quantifiable, big companies can adopt them.

{I} At Kimberly-Clark, Mr Sanders had to discredit the view that jobs working on new products were for those who couldn't hack it in the real business." He has tried to change the culture not just by preaching fuzzy concepts but also by introducing hard incentives, such as increasing the rewards for those who come up with successful new ideas and, particularly, not punishing those whose experiments fail. The genesis of one of the firm's current hits, Depend, a more dignified incontinence garment, lay in a previous miss, Kotex Personals, a form of disposable underwear for menstruating women.

{J} Will all this creative destruction, cannibalisation and culture tweaking make big firms . more creative? David Post, the founder of Umagic, is sceptical: "The only successful intrapreneurs are ones who leave and become entrepreneurs." He also recalls with glee the looks of total incomprehension when he tried to hawk his "virtual experts" idea three years ago to the idea labs of firms such as IBM—though, as he cheerfully adds, "of course, they could have been right." Innovation-unlike, apparently, sex, parenting and fitness—is one area where a computer cannot tell you what to do.

### Questions 28-33

*The reading Passage has ten paragraphs A-J.*

*Which paragraph contains the following information? Write the correct letter A-J, in boxes 28-33 on your answer sheet.*

**NB You may use any letter more than once.**

- (28) Approach to retain best employees
- (29) Safeguarding expenses on innovative idea
- (30) New idea might be proved wrong
- (31) Example of three famous American companies' innovation
- (32) Example of one company changing its focus
- (33) Example of a company resolving financial difficulties itself

### Questions 34-37

*Do the following statements agree with the information given in Reading passage 37 In boxes 34-37 on your answer sheet, write*

TRUE	if the statement is True
FALSE	if the statement is false



NOT GIVEN	If the information is not given in the passage
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(34) Umagic is a new representative of a small innovative company.

(35) Amazon and Wal-Mart exchanged their innovation experience.

(36) New idea holders had already been known to take it to small companies in the past.

(37) IBM failed to understand Umagic's proposal of one new idea.

### Questions 38-40

*Choose the correct letter, A, B, C or D.*

*Write your answers in boxes 38-40 on your answer sheet.*

**Question 38** What is the author's opinion on the effect of innovation in paragraph C?

- (A) It only works for big companies
- (B) Fortune magazine has huge influence globally
- (C) It is getting more important
- (D) Effect on American companies is more evident

**Question 39** What is Peter Chernin's point of view on innovation?

- (A) Small company is more innovative than big one
- (B) Film industry need more innovation than other industries
- (C) We need to cut the cost when risks occur
- (D) New ideas are more likely going to big companies

**Question 40** What is the author's opinion on innovation at the end of this passage?

- (A) Umagic success lies on the accidental "virtual experts"
- (B) Innovation is easy and straightforward
- (C) IBM sets a good example on innovation
- (D) The author's attitude is uncertain on innovation