IELTS Mock Test 2024 February

Reading Practice Test 3

HOW TO USE

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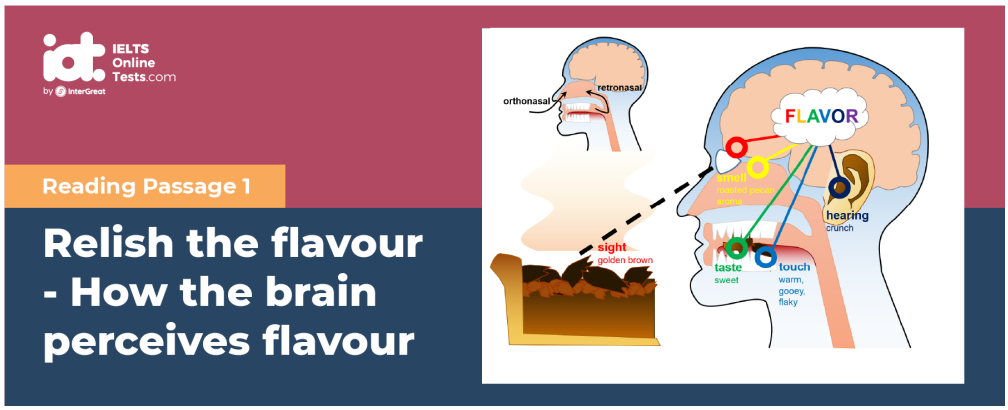
READING PASSAGE 1

You should spend about 20 minutes on ***Questions 1-14****, which are based on Reading Passage 1 below.*



Relish the flavour - how the brain perceives flavour

A. The terms “taste” and “flavour” are used interchangeably. Strictly speaking, however, taste refers to five basic qualities: salty, sour, sweet, bitter and umami (a characteristic of protein-rich foods such as meat and cheese). Smell plays an equally prominent role in flavour but is often underappreciated. Try holding your nose and popping a strawberry- flavoured sweet in your mouth. You will taste the sweetness, but not the strawberry until you let go of your nose and the volatile chemicals from the confectionery enter the nostrils. As if that were not complex enough, irritants—for example, carbonation or the coolness of mint—are detected not by taste or smell, but by the trigeminal sense, a part of the touch system adapted for the mouth. The brain receives news about what is in the mouth from receptors—proteins specialised in picking up particular molecules—located throughout the oral and nasal cavities. Receptors for smell were identified in the early 1990s, and for sweet, bitter and umami only in the past two years (sour and salty tastes were somewhat better understood). That, says Gary Beauchamp, director of the Monell Chemical Senses Institute in Philadelphia, whose group contributed to some of the findings, is more than has been learnt about taste in the past 2,000 years. A receptor for capsaicin, the molecule that gives chilli peppers their bite, was identified only in 1997.

B. The discovery of taste receptors opens the way to mimicking, enhancing or blocking them for various desired effects—such as increasing the salty taste of low-sodium foods, or preventing the bitterness that characterises many medicinal drugs, or boosting the flavours of diets for the elderly to ensure they eat properly. But receptors are only part of the story. Nobody knows how the brain distinguishes a mouthful of milk from a bite of bread, or chicken tikka masala in an Indian restaurant from one bought at a supermarket. Although some scientists argue that the brain's response to stimuli is a simple map of the receptors in the tongue and nose, a more compelling theory suggests that the overall patterning of signals together creates a sense of particular flavours, whose

attractiveness is judged in the light of previous experience.

There are no useful algorithms to measure brain inputs and outputs against subjective reports of flavour sensations. That is good news for neurophysiologists looking for work. But for flavour and fragrance companies—with global sales of flavours accounting for more than a third of the $35 billion-a-year food ingredients market—acceptable tastes bear directly on the bottom line. There is no question that flavour is the most important criterion for consumer acceptance of foods. And being able to predict what customers will like is the industry's greatest single ambition.

C. Throughout history, flavours have been coveted for their ability to increase the palatability of food and to enliven cuisine. In 408, Alaric the Visigoth's price for raising the siege of Rome allegedly included more than 1,000 kilograms of pepper. Industrial production of perfumes began in France in the 18th century to take the smell out of leather gloves. The flavour industry was a logical consequence of such developments. Extracts and essential oils such as citrus were being produced in America by the late 1700s. In 1874, Haarmann and Reimer in Germany became the first company to make synthetic vanillin (from the sap of conifers) on an industrial scale. At first, isolating and identifying gustatory ingredients proved extremely hard. Not only were analytical methods rudimentary, but the substances responsible for taste are present in minuscule amounts even in concentrated foods such as crushed raspberries. After 1950, new analytical techniques made it possible to detect trace ingredients, and companies accumulated chemical libraries that today contain thousands of compounds.

D. Depending on what a customer wants, flavours can be used off the shelf, modified or created anew, following a principle called GRAS (generally recognised as safe). It is a constant challenge to be unique, says Bob Eilerman, leader of flavour research and development for Givaudan, a Swiss company whose scientists float over tropical rainforests in hot-air balloons to find new tastes and ingredients, capture their aromas on site, and then analyse and re-create them in the laboratory. The most potent flavoured chemicals are created by cooking, says Anthony Blake, vice-president of food science and technology at Firmenich in Geneva. Firmenich, Givaudan and International Flavours and Fragrances, the industry leader in America, comprise the big three of flavour and fragrance companies world-wide. Small wonder that Firmenich employs techno-chefs, or that Givaudan dispatches analysts to ethnic restaurants hither and yon.

E. Like colourists grinding and mixing pigments, professional flavourists assemble the 50-100 components that are typical for a flavour into the finished product. Acceptability is measured using panels of expert and consumer (ie, naive) taste-testers in a process called sensory analysis. Trained testers might be asked to rate the taste of vanilla ice-cream according to standards for sweetness and vanilla flavour, whereas consumer testers simply register whether they like it. The process is an iterative one, with several

rounds of refinement between testers and flavourists, until the product is deemed to have an acceptable taste.

Unfortunately, says Alex Häusler, director of flavour excellence at Givaudan, while humans provide the most sensitive testing instrument, they are not the most reliable. People are born with different sets of taste receptors and different ways of interpreting them. Think of the last time you watched somebody pour spoonfuls of sugar into a cup of coffee. Texture is a particular conundrum. It contributes substantially to the pleasure of eating, yet very little is known about it. Why is rubbery squid enjoyable and rubbery toast not? What does "succulent" mean? Since the 1960s, the food industry has devised a battery of instrument tests for desired textural properties, including poking peas with pins and bending biscuits. But theory has been lacking, and giving a carrot a whack bears little resemblance to what happens inside the mouth, where it is traversed by a multitude of physicochemical processes. Julian Vincent of the University of Bath, in Britain, is one of a small band of academic researchers who are trying to relate the results of mechanical tests to perceptions such as crispness.

F. The dynamics of flavour release—ie, the appearance and disappearance of flavour—have also resisted measurement. Researchers at the University of Nottingham, also in Britain, have developed and commercialised an instrument called MS-Nose that sucks in breath from a person's nose while they are chewing gum, for instance, and analyses the aroma molecules it finds there. Firmenich has adopted the technology in its search for better ways of delivering flavour. The approach has stimulated a good deal of interest, even though the results tend to be unique to the person tested.

Physiological studies of flavour are conducted using animals (mostly rats and hamsters) or bacteria, which have robust taste receptors. In humans, techniques such as functional magnetic-resonance imaging and positron-emission tomography—currently being applied to problems as diverse as working memory and lovesickness—can reveal patterns of electrical activity swishing around the brain in real time, says Dr Blake. The idea is to get a person to eat something and see what parts of their brain light up. But the technologies are not yet sensitive enough, nor are the ways of analysing the data meaningful enough, for the methods to be useful in studies of flavour. An alternative approach, says Monell's Dr Beauchamp, would be to focus on specific genes in animals and alter them to track the pathways that the brain uses in integrating signals from the receptors.

G. At present, finding the right enhancer or blocker for a given receptor means looking at thousands of compounds, a task better suited to automated testing than the caprices of the human tongue. Senomyx, a young biotech company in La Jolla, California, intends to use such a technology, called "high-throughput screening", to test legions of compounds against taste and smell receptors. Whether the technique will prove more successful in food science than in pharmaceutical research and development, where it is widely used but has

not yet produced a blockbuster drug, remains to be seen. Another biotech firm, Linguagen of Paramus, New Jersey, is also bringing modern science to bear in the search for flavour modifiers, particularly bitterness blockers.

H. The mouth is the portal of entry to the gut, and taste is the final arbiter. Innate aversions to sour and bitter substances—caffeine, nicotine, strychnine, for example—and a liking for sweet and salty ones reflect the wise choices that humanity's ancestors made in a hostile environment. Beyond these protective and nutritional reflexes, however, taste preferences are largely a matter of culture and learning. The taste system is reasonably compliant, says Tom Scott, a neurophysiologist and dean of sciences at San Diego State University in California. Cultures are kept distinct by cuisines, and cuisines are distinguished by taste.

But cuisines, like continents, have a habit of colliding. Ten years ago, few Americans cared for raw fish. Now they eat sushi almost as avidly as the Japanese. Moreover, “acquired tastes” often involve complex contradictions that play tricks within the brain. How else do you explain the liking for strong-smelling cheese or the East Asian fruit called durian that is so redolent of vomit that it is banned on public transport in some countries? Other effects resist reconciliation, like the unbearable sweetness that artichokes lend to wine. Flavour appears to belong to a family of subtle perceptions—such as recognising a voice or telling faces apart. But how does the central nervous system process all the information needed to make these fine-grained distinctions? The answer should help to develop cheaper and safer flavour compounds, as well as to perform tricks of alchemy such as turning tofu into steak. More fundamentally, identifying algorithms in the brain that transform taste into flavour, and comparing them with how people process complex sounds or tactile sensations, might reveal something about how perception really works.

Questions 1-5

The reading Passage has six paragraphs **A-H** Which paragraph contains the following information? Write the correct letter **A-H**, in boxes **1-5** on your answer sheet.

NB: you may use the letter more than once

1 [ ] . the process of the new food flavor is agreed on

2 [ ] . the reason for some natural preferences

3 [ ] . the reason why flavor has not been researched in depth in the past.

4 [ ] . the explanation of lack of consistency in sensory analyzing data.

5 [ ] . the wider benefits to the knowledge of researching flavors.

Questions 6-10

Do the following statements agree with the information given in the Reading Passage? In boxes **6-10** on your answer sheet, write

TRUE	if the statement agrees with the information
FALSE	if the statement contradicts the information
NOT GIVEN	If there is no information on this

6 [ ] . Both taste and flavor can be experienced only in mouth.

7 [ ] . Some elements in flavor involve neither taste nor smell.

8 [ ] . Ice-cream manufactures are at the forefront of the research on flavor

9 [ ] . It is possible to accurately match the brain activity to the experience of flavor.

10 [ ] . Research is being done to the controlling of the experience of taste.

Questions 11-14

Look at the following statements and the list of researcher below.

Match the person with their opinions.

Write the correct letter. **A-F**, in boxes **11-14** on your answer sheet.

NB You may use any letter more than once.

A	Givaudan
B	University of Bath
C	University of Nottingham
D	Firmenich
E	Chemical senses Institute
F	Linguagen

11 [ ] . Matching brain activity and food input

12 [ ] . Use genetic modification to track flavor signals

13 [ ] . Matching textural qualities of food and sensation

14 [ ] . Identify elements in certain smells

READING PASSAGE 2

You should spend about 20 minutes on ***Questions 15-27****, which are based on Reading Passage 1 below.*

Developmental Tasks of Normal Adolescence

Some years ago, Professor Robert Havighurst of the University of Chicago, USA, proposed that stages in human development can best be thought of in terms of the developmental 'tasks' that are part of the normal transition. He identified ten developmental tasks associated with the adolescent transition. Each of the Havighurst tasks can also be seen as elements of the overall sense of self that adolescents carry with them as they move towards and into young adulthood. Adolescents do not progress through these multiple developmental tasks separately; at any given time they may be dealing with several.

The adolescent must adjust to a new physical sense of self. At no other time since birth does an individual undergo such profound physical changes as during early adolescence. Puberty is marked by sudden rapid growth in height and weight. Also, the young person experiences the emergence and accentuation of those physical traits that make the person a boy or a girl. The young person looks less like a child and more like a physically mature adult. The effect of this rapid change is that mid-adolescents are body-conscious, and their concerns are directed towards their opposite-sexed peers.

The adolescent must adjust to new intellectual abilities. In addition to a sudden spurt in physical growth, adolescents experience a sudden increase in their ability to think about their world. As a normal part of maturity, they are able to think more things. However, they are also able to conceive of their world with awareness. Before adolescence, children's thinking is dominated by a concrete example for any problem that they solve; their thinking is constrained to what is real and physical. During adolescence, young people begin to recognise and understand abstractions. The growth in ability to deal with abstractions accelerates during the middle stages of adolescence.

The adolescent must adjust to increased cognitive demands at school. Adults see high school in

part as a place where adolescents prepare for adult roles and responsibilities and in part as preparatory for further education. School curricula are frequently dominated by the inclusion of more abstract, demanding material, regardless of whether the adolescents have achieved formal thought. Since not all adolescents make the intellectual transition at the same rate, demands for abstract thinking prior to the achievement of that ability may be frustrating.

The adolescent must adopt a personal value system. During adolescence, as teens develop increasingly complex knowledge systems, they also adopt an integrated set of values and morals. During the early stages of moral development, parents provide their child with a structured set of rules of what is right and wrong, what is acceptable and unacceptable. Eventually the adolescent must assess the parent's values as they come into conflict with values expressed by peers and other segments of society. To reconcile differences, the adolescent restructures those beliefs into a personal ideology.

The adolescent must develop expanded verbal skills to accommodate more complex concepts and tasks. Their limited language of childhood is no longer adequate. As their conceptual development may outstrip their verbal development, adolescents may appear less competent than they really are.

The adolescent must establish adult vocational goals. As part of the process of establishing a personal identity, the adolescent must also begin the process of focusing on the question, 'What do you plan to be when you grow up?1 Mid-adolescents must identify, at least at a preliminary level, what their adult vocational goals are and how they intend to achieve them.

The adolescent must develop a personal sense of identity. Prior to adolescence, one's identity is an extension of one's parents' identity. During the early adolescent years a young person begins to recognise their uniqueness and to establish themselves as separate individuals, independent of their parents. As such, one must reconsider the answer to the question, ‘what does it mean to be me?' or "who am I?"

The adolescent must establish emotional and psychological independence from his or her parents, childhood is marked by strong dependence on one's parents. Adolescents may yearn to keep that safe, secure, supportive, dependent relationship. Yet, to be an adult implies a sense of independence, of autonomy, of being one's own person. In an attempt to assert their need for independence and individuality, adolescents may respond with what appears to be hostility and lack of cooperation.

The adolescent must develop stable and productive peer relationships. Although peer interaction is not unique to adolescence, it seems to hit a peak of importance during early adolescence. Certainly by late adolescence or early adulthood the need for peer approval has diminished. This degree to which an adolescent is able to make friends and have an accepting peer group, though, is a major indicator of how well the adolescent will adjust in other areas of social and psychological development. Early adolescence is also a period of intense conformity to peers.” Fitting in' not being different, and being accepted seem somehow pressing to this

age group. The worst possibility, from the view of the young teen, is to be seen by peers as different.

The adolescent must develop increased impulse control and behavioural maturity. In their shift to adulthood, most young people engage in one or more behaviours that place them at physical, social, or educational risk. Risky behaviours are sufficiently pervasive among adolescents to suggest that risk-taking may be a normal developmental process of middle adolescence. Gradually adolescents develop a set of behavioural self-controls through which they assess which behaviours are acceptable and adult-like.

Questions 15-20

Classify the following developments as characterising

A	early adolescence
B	middle adolescence
C	late adolescence

Write the correct letter, **A, B or C**, in boxes **1-6** on your answer sheet

15 [ ] Becoming interested in people of the other gender

16 [ ] Beginning to choose a future career

17 [ ] Needing to feel the same as one's friends

18 [ ] Beginning to form a self-image separate from the family context

19 [ ] Having less need for the good opinion of friends

20 [ ] Exposing oneself to dangers

Questions 21-24

Complete each sentence with the correct ending, **A-E**, below.

Write the correct letter, **A-E** in boxes **7-10** on your answer sheet.

A	reflects an adolescent's emerging self-perception.
B	cannot solve a problem without an example
C	is designed to become more challenging.
D	formulates a personal set of moral beliefs and values.
E	formulates a personal set of moral beliefs and values.

21 [ ] Havighurst proposed a set of tasks which

22 [ ] A course of study at high school

23 [ ] The speed of development of thinking ability during adolescence

24 [ ] Adolescence is a time when the young person

Questions 25-27

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

In boxes **25-27** on your answer sheet, write

TRUE	if the statement agrees with the information
FALSE	if the statement contradicts the information
NOT GIVEN	If there is no information on this

25 [ ] Most pre-adolescent children are capable of abstract thought.

26 [ ] Adolescents 'limited skills with words may give a false impression of their ability.

27 [ ] Whether or not an adolescent is accepted by their age-group is an important clue to other aspects of their social adjustment.

READING PASSAGE 3

You should spend about 20 minutes on ***Questions 27-40****, which are based on Reading Passage 1 below.*

The Ecological Importance of Bees

A Sometime in the early Cretaceous period of the Earth's history, hunting wasps of a certain type became bees by adopting a vegetarian diet: they began to rely more and more on the pollen of plants as a source of protein for themselves and their offspring, as an alternative to insects. In so doing, they accidentally transported pollen on their bodies to other plants of the same species, bringing about pollination. The stage was thus set for a succession of ever-closer mutual adaptations of bees and flowering plants. In particular, flowers began to reward bees for their unwitting role in their reproduction by providing richer sources of pollen and another source of nutrition, nectar.

B Today about 15 per cent of our diet consists of crops which are pollinated by bees. The meat and other animal products we consume are ultimately derived from bee- pollinated forage crops, and account for another 15 per cent. It follows that around one third of our food is directly or indirectly dependent on the pollinating services of bees. On a global basis, the annual value of agricultural crops dependent on the pollination services of bees is estimated at £1,000 million (US$1,590 million). Much of this pollination is due to honey bees, and in monetary terms it exceeds the value of the annual honey crop by a factor of fifty.

C But the apparently harmonious relationship between bees and plants conceals a conflict of interests. Although flowers need bees and vice versa, it pays each partner to minimise its costs and maximise its profits. This may sound like an extreme case of attributing human qualities to non-human species, but using the marketplace and the principles of double-entry book keeping as metaphors may give US some insights into what is really going on between bees and flowering plants. In the real world, both flower and bee operate in a competitive marketplace. A community of retailers, the flowers, seek to attract more or less discriminating consumers, the bees. Each flower has to juggle the costs and benefits of investing in advertising, by colour and scent, and providing rewards, nectar and pollen, clearly a species which depends on cross-

pollination is on a knife-edge: it must provide sufficient nectar to attract the interest of a bee, but not enough to satisfy all of its needs in one visit. A satiated bee would return to its nest rather than visit another flower. The bee, on the other hand, is out to get the maximum amount of pollen and nectar. It must assess the quality and quantity of rewards which are on offer and juggle its energy costs so that it makes a calorific profit on each foraging trip. The apparent harmony between plants and bees is therefore not all that it seems. Instead, it is an equilibrium based on compromises between the competing interests of the protagonists.

D This sounds remarkably like the ideas of the 18th-century economist Adam Smith. In his book, The Wealth of Nations, Smith postulated that in human society the competitive interactions of different 'economic units' eventually resulted in a balanced, or 'harmonious' society. One might predict, therefore, that economists would find the relationships between bees and plants of some interest. This is the case in Israel, where economists are collaborating with botanists and entomologists in a long-term study of the pollination biology of the native flora, in an attempt to understand the dynamics of the relationship between communities of bees and plants.

E This sort of study is of more than passing academic interest. It is important that authorities understand the dynamic relationships between plants and their pollinators. This is especially true when, say, devising conservation policies. A good example comes from the forests of tropical South America. Here, as in all rainforests, there is a high diversity of tree species. There may be more than 120 per acre, but in a given acre there may only be one or two individuals of any one species: These trees are pollinated by large, fast-flying bees. There is evidence that certain types of bees learn the distribution of these scattered trees and forage regularly along the same routes. This is called 'trap-lining' and the bees forage for up to 23 km from their nests. The bees are therefore acting as long distance pollinators.

F An issue of current concern in tropical forest conservation is that of trying to estimate the minimum sustainable size of islands' of forest reserve in areas where large-scale felling is taking place. There is much discussion on seed dispersal distances. But this is only one half of the equation, so far as the reproduction of trees is concerned. There is another question that must be addressed in order to calculate whether proposed forest reserves are close enough to the nearest large tract of forest: 'what is the flight range of these long-distance foragers?' We need to know much more about bees and their relationships with plants before this question can be answered.

G Bees, then, are vital to our survival. Furthermore, much of the visual impact of human environments derives from vegetation, and most vegetation is dependent on bees for pollination. Thus, as pollinators of crops and natural vegetation, bees occupy key positions in the web of relationships which sustain the living architecture of our planet.

Questions 28-32

Reading Passage has seven paragraphs, **A-G**

Choose the correct heading for paragraphs A, B, D, E and F from the list of headings below.

Write the correct number, **i-viii**, in boxes **28-32** on your answer sheet.

	List of Headings
i	Parallels between bee and human activities
ii	An evolutionary turning point
iii	An evolutionary turning point
iv	The preservation of individual plant species
v	The commercial value of bees
vi	The structure of flowering plants
vii	The pursuit of self-interest
viii	The need for further research

28 [ ] Paragraph A

29 [ ] Paragraph B

Example

Paragraph C **vii**

30 [ ] Paragraph D

31 [ ] Paragraph E

32 [ ] Paragraph F

Questions 33-39

Complete the sentences below.

Choose **NO MORE THAN TWO WORDS AND/OR A NUMBER** from the passage for each answer.

Write your answers in boxes **33-39** on your answer sheet.

33. Hunting wasps used to feed on other 33 _____ , rather than on vegetation.

34. Flowering plants started to reward bees with rich pollen and an additional food

in the form of 34 _____

35. Approximately 35 _____ of human food production relies on the activity of bees.

36. If the process of 36 _____ is to take place effectively, bees need to travel from one flower to another before going back to the nest.

37. Bees need to balance the 37 _____ of each trip against the calorific rewards they obtain.

38. There can be over 120 different 38 _____ in. an acre of rainforest.

39. The bees that pollinate large forests regularly practise an activity known as 39 _____

Questions 40

40 Choose the correct letter , A, B, C or D. Write the correct letter in box **13** on your answer sheet. Which is the best title for Reading Passage ?

- **A** The Ecological Importance of Bees
- **B** The Evolutionary History of Bees
- **C** The Social Behaviour of Bees
- **D** The Geographical Distribution of Bees

Solution:

Part 1: Question 1 - 14

1. E
2. H
3. C
4. B
5. B
6. FALSE
7. TRUE
8. NOT GIVEN
9. FALSE
10. TRUE
11. D
12. E
13. B
14. C

Part 2: Question 15 - 27

15. B
16. B
17. A
18. A
19. C
20. B
21. A
22. C
23. E
24. D

25 FALSE

26 TRUE

27 TRUE

Part 3: Question 28 - 40

28 ii

29 v

30 i

31 iv

32 viii

33 insects

34 nectar

35 one third

36 cross-pollination

37 energy costs

38 tree species

39 trap-lining

40 A