IELTS ACADEMIC · READING PASSAGE 2 · QUESTIONS 1–14 · SUGGESTED TIME: 20 MINUTES

READING PASSAGE 2

The Riddle of the Stripes

Why one of zoology's oldest questions took more than a century to answer

A Few patterns in the natural world are as instantly recognisable as the black-and-white coat of a zebra, and few have proved as stubbornly difficult to explain. The question of what the stripes are *for* has occupied biologists for more than a hundred and fifty years; even Charles Darwin and his fellow naturalist Alfred Russel Wallace, who together laid the foundations of evolutionary theory, disagreed about the answer. In the decades since, proposed explanations have multiplied rather than narrowed, and for a long time there was no obvious way to choose between them.

B The many suggestions fall into four broad categories. The first is protection from predators: the stripes might serve as camouflage at a distance, or might confuse a charging lion by making it harder to single out one animal from a moving herd. The second is a social function: that the pattern helps individual zebras to recognise one another, or strengthens the bonds of the group. The third is thermoregulation — the idea that dark and pale stripes, by absorbing and reflecting sunlight unequally, set up small currents of air that help to keep the animal cool. The fourth, and at first the least glamorous, is defence against biting flies. For decades, no single explanation could be shown to be superior to the others.

C A turning point came with a study published in 2014, which took an unusual approach. Rather than examining zebras in isolation, the researchers looked across the whole horse family, which today numbers seven living species: some are boldly striped, like the zebras; some, such as the Asiatic wild ass, are not striped at all; and some are striped only in part. When the degree of striping in each species was mapped against the conditions in which it lived, one relationship stood out. Striping corresponded most closely not with the presence of large predators, nor with high temperatures, nor with open grassland, but with the prevalence of biting flies. The comparison across species made the pattern visible in a way that studying zebras alone never could.

D That biting flies should matter so much to these animals is less surprising than it first appears. The horseflies and tsetse flies of Africa carry diseases that can be fatal to members of the horse family, which, with their short coats, are especially exposed to them. Any feature that reduced the number of successful bites would therefore be strongly favoured by natural selection. Yet a correlation, however striking, is not an explanation: it showed that stripes and flies were linked, but not how a pattern of light and dark could possibly keep an insect away.

E The mechanism was tackled by experiment. In one study, researchers dressed plain-coloured domestic horses in striped, all-black and all-white coats and filmed biting flies as they approached. From a distance, the flies were drawn equally to every animal, striped or not. The difference emerged only at the very last moment: as a fly neared a striped surface, it failed to slow down for a controlled landing, and instead overshot, flew past, or simply collided with the animal and bounced away. On the horse's uncovered head, where there were no stripes, the flies landed as normal — demonstrating that the effect operates only at close range. The favoured interpretation is that the bold pattern disrupts the fly's vision in the final stage of its approach.

F Not everyone is persuaded that flies are the whole story. A minority of researchers continue to argue that the stripes exist chiefly to keep the animal cool. They point out that air moves differently over the dark and pale bands, and that a zebra can raise the hairs of its black stripes while keeping the white ones flat, perhaps sharpening the effect. Overheating, they contend, is a constant danger for an animal that grazes all day in the sun, whereas biting flies are only a seasonal and local nuisance — too minor a threat, in their view, to have

driven the evolution of so dramatic a feature. The cooling effect, however, has proved small and hard to measure, and many other mammals share the same hot environments without wearing stripes.

G For the present, most specialists regard fly deterrence as the best-supported explanation, even as the precise way in which the stripes confuse an insect is still being worked out, and a determined minority continue to press the case for cooling. The episode is a reminder that a single conspicuous feature may serve more than one purpose, and that a question can feel settled in outline while its details remain genuinely open. What once looked like an idle curiosity — why a horse should wear something resembling a barcode — has turned out to reward exactly the kind of patient, comparative testing that separates a good explanation from a merely plausible one.

TRUE / FALSE / NOT GIVEN

Questions 1–5. *Do the following statements agree with the information given in Reading Passage 2? Tick (✓) one box for each statement.*

1. Darwin and Wallace agreed with each other about why zebras have stripes.

☐ TRUE ☐ FALSE ☐ NOT GIVEN

2. The 2014 study examined striping patterns across several species of the horse family.

☐ TRUE ☐ FALSE ☐ NOT GIVEN

3. According to the 2014 study, striping corresponds most closely to the presence of large predators.

☐ TRUE ☐ FALSE ☐ NOT GIVEN

4. In the horse-coat experiment, flies landed normally on the animals' uncovered heads.

☐ TRUE ☐ FALSE ☐ NOT GIVEN

5. Zebras are more vulnerable to fly-borne disease than any other animal in Africa.

☐ TRUE ☐ FALSE ☐ NOT GIVEN

MULTIPLE CHOICE

Questions 6–9. *Choose the correct letter,* ***A****,* ***B****,* ***C*** *or* ***D****.*

6. What was the main advantage of studying the whole horse family rather than zebras alone?

- **A** It allowed striped and unstriped species, and the conditions they live in, to be compared
- **B** It reduced the cost and difficulty of the fieldwork
- **C** It proved that all members of the family share a common ancestor
- **D** It established that zebras are the oldest species in the family

7. According to the horse-coat experiment, when did the stripes affect the flies' behaviour?

- **A** As soon as the flies set out towards the animals
- **B** Only in the final moments of the flies' approach
- **C** Only after the flies had already landed on the coat
- **D** Only at night, when the contrast between the bands was greatest

8. Why do supporters of the thermoregulation hypothesis doubt the fly explanation?

- **A** Because biting flies are not found where zebras live
- **B** Because they regard biting flies as too minor and seasonal a threat to have driven the trait
- **C** Because zebras are never observed to be bitten by flies
- **D** Because the horse-coat experiments could not be repeated

9. What is the writer's overall conclusion about the question of zebra stripes?

- **A** The matter has now been completely and finally resolved
- **B** Fly deterrence is the best-supported explanation, though some details remain open
- **C** The thermoregulation hypothesis has been conclusively disproved
- **D** The stripes serve no adaptive purpose at all

SENTENCE COMPLETION

Questions 10–11. *Complete the sentences below. Choose* ***NO MORE THAN TWO WORDS*** *from the passage for each answer.*

10. Biting flies are a serious threat to the horse family because they carry _____ that can be fatal.

11. In the experiment, researchers filmed flies as they approached striped surfaces and plain-coloured _____.

MATCHING INFORMATION

Questions 12–14. *The reading passage has seven paragraphs,* ***A–G****. Which paragraph contains the following information? Write the correct letter,* ***A–G****.*

12. A statement of the four broad categories of explanation that have been proposed. _____

13. A reference to a disagreement between two early naturalists about the stripes. _____

14. An account of how stripes affect a fly's ability to land. _____

ANSWER KEY

For teacher / self-study use. Fold or detach before distributing to students.

Q	ANSWER	PARA	EXPLANATION
1	**FALSE**	**A**	The passage states that Darwin and Wallace disagreed about the answer.
2	**TRUE**	**C**	The study looked across the seven living species of the horse family.
3	**FALSE**	**C**	Striping corresponded with biting flies, *not* with predators, temperature or open grassland.
4	**TRUE**	**E**	On the uncovered head (the control) the flies landed as normal — a detail easily missed.
5	**NOT GIVEN**	**D**	The passage says equids are especially exposed, but never claims they are more vulnerable than *any other* African animal. (A superlative trap.)
6	**A**	**C**	Comparing striped and unstriped species against their conditions revealed the pattern.
7	**B**	**E**	The effect appeared only in the final moments of approach. C is the opposite of the text.
8	**B**	**F**	They regard flies as too minor and seasonal a threat. A and C contradict the passage.
9	**B**	**G**	Best-supported, details still open. A overstates; C is too strong (cooling is still pressed by a minority).
10	**diseases**	**D**	“carry diseases that can be fatal”.
11	**domestic horses**	**E**	“plain-coloured domestic horses”.
12	**B**	**B**	The four broad categories: predators, social function, thermoregulation, biting flies.
13	**A**	**A**	Darwin and Wallace's disagreement.
14	**E**	**E**	How approaching flies fail to make a controlled landing on stripes.

APPROXIMATE IELTS BAND EQUIVALENCE (14 QUESTIONS)

SCORE	14	13	12	11	10–9	8–7	6–5	≤4
BAND	9.0	8.5	8.0	7.5	7.0–6.5	6.0–5.5	5.0	<5.0