

Academic Reading Paper 23

Cartouches, Signals and Speakers

Time allowed: 1 hour

INSTRUCTIONS TO CANDIDATES

- Do not open this booklet until you are told to do so.
- Write your name and the date at the top of the answer sheet.
- Answer **all** the questions.
- Write your answers **on the answer sheet**, not in this booklet.
- You must transfer your answers within the hour. **No extra time is given for transferring answers in the Reading test.**
- Do not remove this booklet from the examination room.

INFORMATION FOR CANDIDATES

- There are 40 questions in this paper.
- Each question carries one mark.
- There are three passages, with 13, 13 and 14 questions.

These passages were written for this library. They are **not** reproduced from any published past paper. The format, timing and task types follow the published specification for the Academic Reading test so that sitting this on paper feels like the real thing.

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

Fourteen centuries of reading it wrong

The last dated inscription in Egyptian hieroglyphs was cut at Philae in the year 394, and within a few generations nobody alive could read the script that had been in continuous use for more than three thousand years. What survived was not the ability but an explanation of it. A late work attributed to a writer called Horapollon described the signs as pictures of ideas: an image of a hare meant opening, because the animal sleeps with its eyes open; a vulture meant mother, because the species was believed to have no males. The book was rediscovered in Europe in 1419 and taken as authoritative, and a few of its readings are even roughly right, which did it no favours at all: a source that is occasionally correct is far harder to abandon than one that is uniformly wrong.

That assumption held for fourteen hundred years and it was the whole obstacle. If the signs encode ideas directly, then reading them requires no knowledge of any language, only the right key to the symbolism, and scholars accordingly produced keys. In the seventeenth century Athanasius Kircher published lengthy translations of inscriptions that are now known to say nothing of the kind, arriving at spiritual doctrines from texts that record grain deliveries. He was learned, industrious and working from a premise that made the correct answer unreachable.

The material that broke it was found in July 1799, when French soldiers strengthening a fort near the town of Rashid uncovered a slab of dark stone carrying the same decree in three scripts. The decree itself was unremarkable, an announcement of honours for the young king Ptolemy the Fifth issued by priests in 196 before the common era. What mattered was the arrangement: fourteen damaged lines of hieroglyphs at the top, thirty-two lines of a cursive Egyptian script in the middle, and fifty-four lines of Greek at the bottom, which anybody with a classical education could read.

The stone passed to British hands in 1801 and went to London, but the object was never the point. Casts were taken and engravings printed and distributed across Europe from 1802 onwards, so that the work of decipherment was done by men who in most cases never saw the stone. It is one of the few episodes in the period where publication moved faster than possession, and the decipherment was accordingly a race conducted in print between men in different countries who were reading the same engraving.

Thomas Young made the first real progress between 1814 and 1819. He established that the cursive middle script was not a separate language but a running form of the same one, that it was partly alphabetic, and that the oval rings which appear in the hieroglyphic text, now called cartouches, enclose royal names. Comparing the position of Ptolemy in the Greek with the cartouches above, he assigned sound values to several signs and got most of them right. Then he stopped short, because he continued to hold that phonetic writing was a special device the Egyptians had adopted only to record foreign names.

Jean-François Champollion had an advantage that had nothing to do with the stone. He had studied Coptic, the last stage of the Egyptian language, which survived written in Greek letters in the liturgy of the Egyptian church and was still recited when he was alive. He therefore knew what the language sounded like, what its words meant and how it was built, and he could test a proposed reading against a living descendant instead of against a theory.

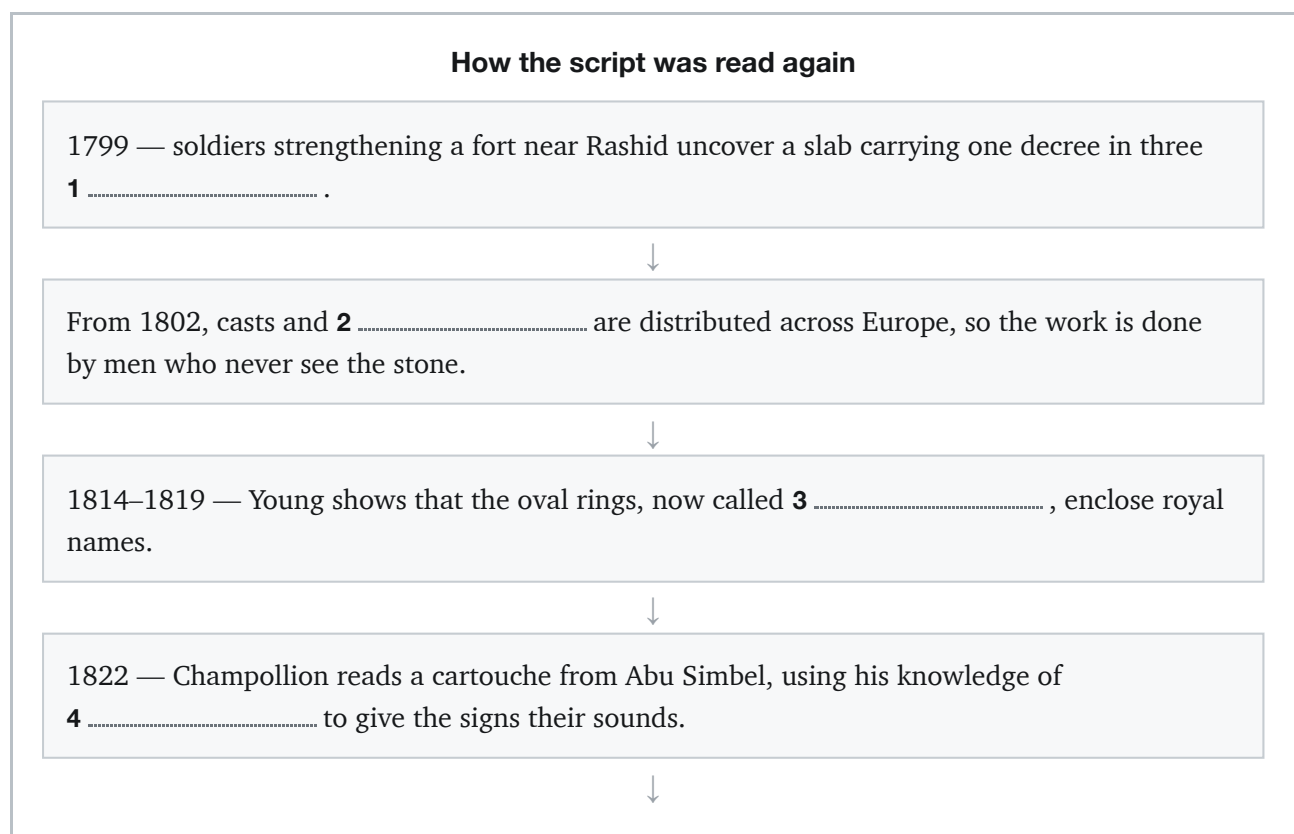
In 1822 he worked on a cartouche copied at Abu Simbel, from a monument far older than any Greek presence in Egypt. It held four signs: a sun disc, then the same sign twice, then a final sign he already knew stood for the sound s. In Coptic the word for sun is re. If the disc was being used for its sound, the name began re, ended in s, and had something between; the something was a sign he read as mes, from the Coptic word for birth. The name was Ramesses, and it was Egyptian. Phonetic writing was not a foreign borrowing but the ordinary machinery of the script.

His letter announcing this was published in September 1822, and the account he set out two years later described a system nobody had expected. Hieroglyphic writing is mixed. Some signs stand for sounds, some stand for whole words, and some are not pronounced at all but sit at the end of a word to say what kind of thing it is. It records consonants and leaves the vowels out, which is why Coptic was indispensable rather than merely useful. Champollion died in 1832, aged forty-one, with the grammar unfinished, and it was published by his brother from the papers he left.

Questions 1–5

Complete the flow-chart below.

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



The name proves to be Egyptian, not foreign, so phonetic writing is shown to be the ordinary
5 of the script.

Questions 6–9

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

Write **TRUE** if the statement agrees with the information, **FALSE** if the statement contradicts the information, or **NOT GIVEN** if there is no information on this.

- 6 A few of Horapollo's readings were approximately correct.
- 7 Kircher failed because he was careless in his scholarship.
- 8 Casts of the stone were sent outside Europe.
- 9 Young concluded that the Egyptians wrote phonetically as a matter of course.

Questions 10–13

Complete the sentences below.

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

- 10 The last dated hieroglyphic inscription was cut at Philae in the year
- 11 The hieroglyphic section of the stone has damaged lines.
- 12 As well as signs for sounds, the script has signs standing for whole
- 13 Egyptian writing records consonants and leaves out the

You should spend about 20 minutes on Questions 14–26, which are based on Reading Passage 2 below.

What a plant does when it is bitten

- A** A plant that is being eaten cannot leave, and this single fact organises almost everything about how it defends itself. Its options are chemical and they are mostly not held in reserve, because manufacturing poison is expensive and most leaves are never attacked. Instead the defences are induced: within hours of damage, a leaf can raise its content of compounds that make it harder to digest, bitter to taste, or actively toxic, and the response spreads to leaves the insect has not yet reached and even to leaves on the far side of the plant. A leaf that is never touched costs the plant almost nothing, and one that is attacked can be made expensive to eat within a single afternoon. That much has never been controversial. What happened next in the field was.
- B** In 1983 Ian Baldwin and Jack Schultz reported that the response was not confined to the damaged plant. Seedlings kept in sealed chambers alongside torn ones raised their own defensive chemistry, although nothing had touched them and nothing connected them but air. The newspapers called it talking trees. The response from other researchers was hostile and largely justified: the number of plants was small, the chambers rather than the plants were the true unit of the experiment, and no mechanism was proposed. A striking result with a weak design is not a discovery, and for several years the finding sat in an uncomfortable position between the two: too interesting to forget and too poorly supported to build on.
- C** It was rescued by chemistry rather than by better ecology. In 1990 Ted Farmer and Clarence Ryan showed that a volatile compound called methyl jasmonate, given off by sagebrush, would induce defensive proteins in tomato plants sealed in a jar with it. Here was a named molecule, a measurable dose and a specific response, and it converted the earlier claim from an anecdote about air into a piece of biochemistry that another laboratory could repeat. Whether wild plants routinely signal to each other in a forest is a separate question from whether they can do it in a jar, and only the second of those was now settled. Keeping the two apart is the whole discipline of this subject, and it is the step that later got skipped.
- D** A related finding of the same year is stranger and better established. Maize attacked by caterpillars releases a blend of volatiles that attracts parasitic wasps, which lay their eggs in the caterpillars. The plant is not defending itself directly at all; it is advertising the presence of prey to something that will remove the problem. The blend differs according to which insect is doing the damage, so the message carries information about the attacker and not merely about the injury. A wasp that responds to it is not being generous either; it is being told where its own offspring can develop.
- E** Then the story went underground, and this is where it began to outrun its evidence. In 1997 Suzanne Simard reported in *Nature* that carbon labelled with isotopes moved between Douglas fir and paper birch through the fungal threads that connect the roots of both, with a net flow towards

whichever seedling was shaded. Fungi live in partnership with almost all land plants, exchanging minerals for sugar, and the finding that a single fungal network can link two different tree species was a real one, carefully done and repeatedly confirmed.

F What was built on it was not. Within twenty years the result had become a popular account of forests as cooperative societies, with mother trees deliberately feeding their offspring through a wood wide web. In 2023 Justine Karst, Melanie Jones and Jason Hoeksema went through the literature and reported three things. The field evidence that such networks are widespread and benefit seedlings is thin. The claims made in papers had grown steadily more confident over time without the data growing with them. And citations increasingly pointed to popular books, or to studies that had not found what they were said to have found.

G None of that shows the networks are imaginary, and the authors did not say so. It shows that a modest, genuine result was carried a long way by a good phrase, and that the carrying was done partly by scientists citing each other rather than by anyone going back to the measurements. The reliable part of this field remains what it was in 1990: plants detect damage, they change their chemistry, they emit volatiles that other organisms respond to, and some of those organisms are useful to them. What happens between roots is real, is not well quantified, and is at present a great deal better known to the public than it is understood by anybody.

Questions 14–20

Reading Passage 2 has seven sections, A–G.

Choose the correct heading for each section from the list of headings below.

Write the correct number, I–X.

List of Headings

- i Defences held in reserve at all times
- ii Defences produced only once they are needed
- iii A result too weak to build on and too interesting to drop
- iv A result strong enough to settle the question at once
- v A named molecule turns a claim into chemistry
- vi A plant that recruits something else to do the fighting
- vii A genuine finding about two species and one fungus
- viii A finding that the claims outgrew
- ix What can safely be said now
- x Why the networks turned out to be imaginary

14 Section A

15 Section B

- 16** Section C
17 Section D
18 Section E
19 Section F
20 Section G

Questions 21–24

Look at the following findings and the list of researchers below.
Match each finding with the correct researchers, A–D.

List of Researchers	
A	Baldwin and Schultz
B	Farmer and Ryan
C	Suzanne Simard
D	Karst, Jones and Hoeksema

- 21** They showed that a single named compound could induce a defensive response.
22 They found that undamaged plants responded when kept beside damaged ones.
23 They reported that published claims had strengthened while the evidence had not.
24 She traced a labelled element moving between two kinds of tree.

Questions 25–26

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

- 25** Why does the passage say the 1983 criticism was largely justified?
A The result was later shown to be false.
B Few plants were used and the chambers, not the plants, were the real unit.
C The researchers had misreported their data.
D Other laboratories could not obtain any signalling at all.
- 26** What does the passage say about the volatile blend released by attacked maize?
A It is the same whichever insect is feeding.
B It repels the caterpillars directly.
C It varies according to which insect is causing the damage.
D It is produced only after the caterpillars have left.

You should spend about 20 minutes on Questions 27–40, which are based on Reading Passage 3 below.

Whose language is it

English has somewhere around four hundred million people who grew up speaking it and, by the usual estimates, between one and two billion who use it. Native speakers are therefore a minority of its users, and a shrinking one, and most conversations conducted in English on any given day take place between people for whom it is not a first language. Those are not contested figures, and they have been true for some time. What is contested is what follows from them, and the two answers usually on offer are both wrong in ways that cost learners a great deal of time and, in a few cases, a good deal of money.

The first answer is that the language belongs to the countries where it began, which set the standard that everyone else approximates. On this view the varieties spoken in India, Nigeria or Singapore are stages on a road towards British or American English, and their characteristic features are errors that have become habitual. This is difficult to maintain once you look at the numbers, and impossible once you look at the institutions: Indian English has its own dictionaries, its own newspapers, a literature and a body of usage older than most people assume, and it is not an approximation of anything.

The second answer, offered as the corrective, is that all varieties are equal and that correction is therefore an imposition. This has the appeal of generosity and it abandons the learner. A student is not choosing a variety in the abstract; they are trying to be understood by particular people, and to pass examinations set by institutions that do enforce a standard whether or not the enforcement is philosophically defensible. Telling that student it does not matter is a position that costs the speaker nothing and the listener their result.

The research that cuts through this asked a question neither side had asked, which is what actually stops people understanding each other. Jennifer Jenkins recorded speakers of many first languages using English with each other and looked at the points where communication broke down. The findings do not match anybody's intuitions. Consonant sounds mostly matter, and the ones in thin and this almost never do. The length of a vowel matters; its exact quality usually does not. Consonants at the beginning of a word must be kept, and deleting one causes real trouble, while the reduced vowels that native speakers use in unstressed syllables cause trouble when they are used rather than when they are missing.

That last set of results should be uncomfortable for anybody who has taught the language. A great deal of classroom effort goes into the two sounds spelled with th, which are rare among the world's languages, difficult for most learners and almost entirely irrelevant to being understood. Rather less goes into initial consonant clusters, which are not optional. Effort is being spent in proportion to how foreign a feature sounds to a native ear rather than in proportion to what it does.

So the useful question is not which English is correct. It is who the learner is going to be talking to. Somebody who will spend their working life in meetings with colleagues from six countries needs a different set of priorities from somebody moving to Manchester, and both need something different again to

satisfy an examiner. These are three audiences, they overlap, and a course that refuses to say which one it is preparing for is making the choice anyway and hiding it.

There is an obvious objection, which is that mutual intelligibility across varieties is a real constraint and cannot be wished away. That is correct and it is not an argument for a single standard. Intelligibility is a property of a pair of speakers, not of a variety, and it is improved by exposure to a range of accents at least as much as by any speaker moving towards a model. The listener has a job to do here, and in the usual telling of this argument the listener has no obligations at all.

What ought to follow is modest. Say which audience a course is for. Rank the features to be taught by their measured effect on being understood, rather than by how strongly they mark a speaker as foreign. And stop describing as errors the settled features of varieties used by hundreds of millions of people, while continuing to teach, honestly and without apology, whatever an examination is going to require. Those two things are not in conflict, and treating them as though they were is what has kept this argument circular for forty years while the people it is conducted on behalf of get on with using the language.

Questions 27–31

Do the following statements agree with the claims of the writer in Reading Passage 3?

Write **YES** if the statement agrees with the claims of the writer, **NO** if the statement contradicts the claims of the writer, or **NOT GIVEN** if it is impossible to say what the writer thinks about this.

- 27** The writer thinks correction should be abandoned because all varieties are equal.
- 28** The writer accepts that examinations do impose a standard.
- 29** Indian English is more widely used than Nigerian English.
- 30** The writer believes intelligibility is a property of a variety rather than of a pair of speakers.
- 31** The writer holds that a listener has obligations in a conversation as well.

Questions 32–36

Complete the summary below.

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

What the breakdown research found

Jenkins recorded speakers of many first languages using English together and looked for the points at which communication **32** The results do not match anybody's intuitions. Consonants at the start of a word must be kept, and deleting one causes real **33** The length of a vowel matters but its exact **34** usually does not. The writer concludes that classroom effort is currently spent in proportion to how **35** a

feature sounds rather than in proportion to what it does, and that a course should instead say which **36** it is for.

Questions 37–40

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

- 37** Why does the writer mention dictionaries and newspapers?
- A To show that Indian English has its own institutions rather than being an approximation.
 - B To argue that printed English is more correct than spoken English.
 - C To show that Indian English is easier to learn.
 - D To explain why some varieties disappear.
- 38** Which position does the writer reject?
- A That mutual intelligibility is a real constraint.
 - B That the countries where English began set the standard others approximate.
 - C That a learner has a particular audience in mind.
 - D That exposure to many accents improves understanding.
- 39** According to the research described, the sounds spelled with th
- A are the commonest cause of misunderstanding.
 - B are found in most of the world's languages.
 - C almost never affect whether a speaker is understood.
 - D are easy for most learners to produce.
- 40** Which of the following best expresses the writer's recommendation?
- A Name the audience, rank features by their effect on being understood, and still teach what the examination requires.
 - B Teach only the variety spoken where the learner lives.
 - C Stop preparing learners for examinations.
 - D Adopt a single international standard for all learners.