

LISTENING

Time: 15 minutes
(13 points)

Task 1.

You will hear four different extracts. For **Questions 1–8**, choose the answer (**A, B** or **C**) which fits best according to what you hear. There are two questions for each extract. You will hear each extract **TWICE**.

Extract 1.

You hear an engineer talking about robots.

1. Why are housekeeping robots still not widely used?
 - A. They are difficult to operate.
 - B. The procedure of programming is extremely complicated.
 - C. They don't look like humans.
2. Some lifelike robots have been programmed so that they can
 - A. be used for training purposes.
 - B. be taken for real human beings.
 - C. mimic different patterns of human behaviour.

Extract 2.

You hear an ecologist talking about an endangered species.

3. Kiwi derives its name from
 - A. the type of sounds it produces.
 - B. the type of food it feeds on.
 - C. the fact that it cannot fly.
4. The programme is aimed at
 - A. enlarging the number of other animals like emu and ostriches.
 - B. improving the environmental education of the public.
 - C. saving the bird from extinction.

Extract 3.

You hear a psychologist talking about confidence.

5. What does the speaker say about the word “confidence”?
 - A. Most dictionary definitions of it are inaccurate.
 - B. It means a great deal more than simply “self-assurance”.
 - C. It is a hard word to define precisely.
6. What does the speaker say about having confidence?
 - A. There is no one who doesn't want to have it.
 - B. It frequently changes into feeling superior.
 - C. Some people are incapable of it.

Extract 4.

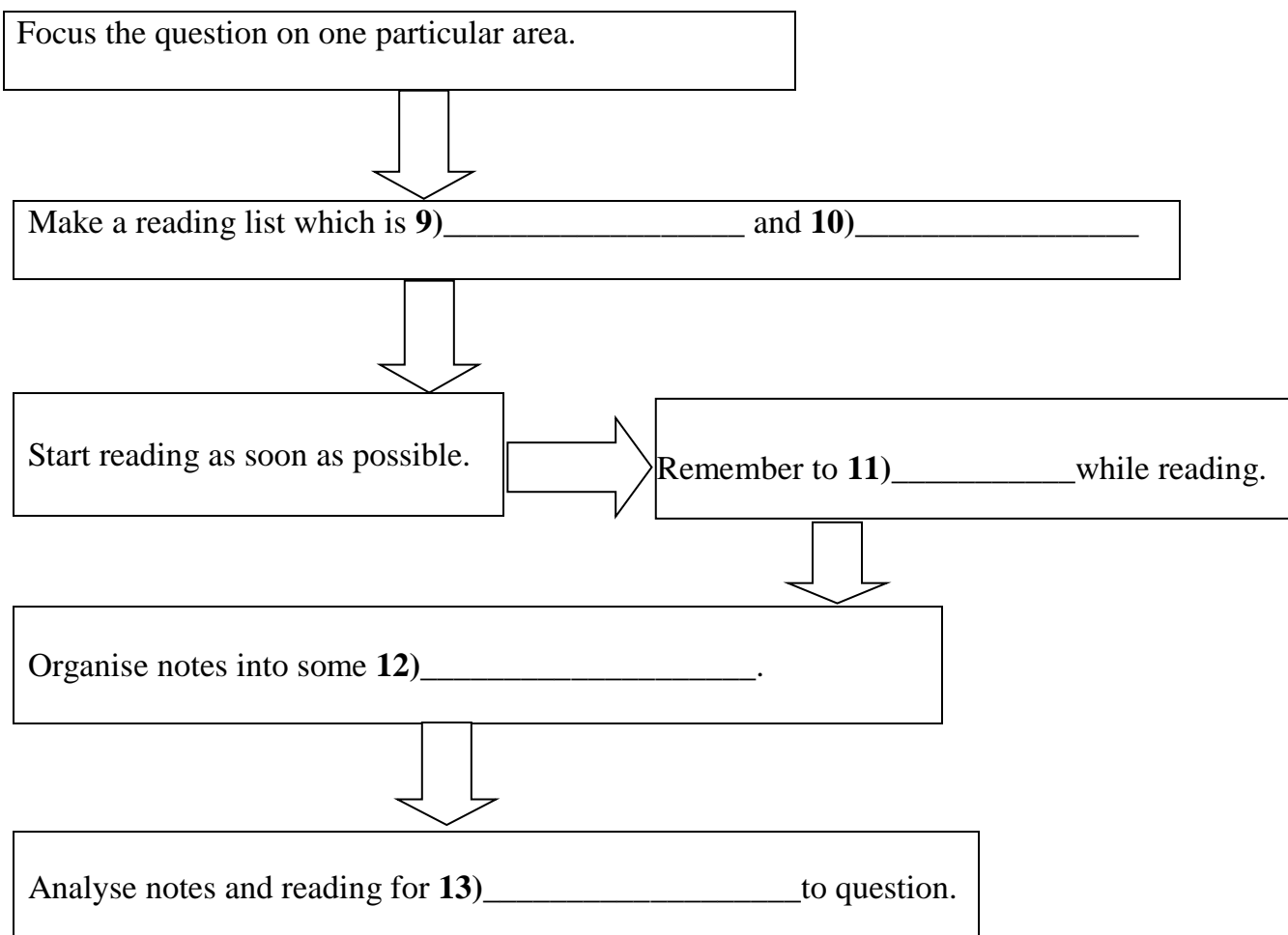
You hear two friends talking about some research.

7. What is the man's attitude to the research?
- A. He is doubtful about the methods used.
 - B. He is surprised by its findings.
 - C. He is dismissive of the concept behind it.
8. During the discussion, the woman reveals her
- A. sympathy towards the subjects of the experiments.
 - B. interest in complex human behaviour.
 - C. admiration for the originality of the research.

Task 2.

You will hear a tutor and a student discussing the process of doing a research project on alternative energy. Listen and complete the flow chart below. Write **no more than three words and/or a number** for each answer. You will hear the dialogue **only once**.

Alternative energy research project: process



TRANSFER YOUR ANSWERS TO THE ANSWER SHEET!

READING

Time: 25 minutes
(16 points)

Task 1.

Read an article about scientific interpretations of modern art. For Questions 1–7, choose from the sections (A–D). The sections may be chosen more than once.

In which sentence does the writer ...

1)___	mention certain viewers being able to relate to what artists had in mind?
2)___	refer to a doubt about the merit of a piece of artwork?
3)___	highlight a need for artists to strike the right balance?
4)___	indicate a possible reason for difficulty in reaching a consensus?
5)___	state that people may have a shallow reason for liking a piece of art?
6)___	suggest that some artists are aware of how they can satisfy the brain?
7)___	refer to a shift in her own perception?
8)___	point out shortcomings in a specific piece of research?
9)___	mention the possibility of extending the scope of an existing research area?
10)___	describe a procedure employed in the gathering of some scientific data?

A scientific view of modern art

Kat Austen investigates scientific research on modern art and why we appreciate it

- A** Standing in front of Jackson Pollock's *Summertime: Number 9A* one day I was struck by a strange feeling. What I once considered an ugly collection of random paint splatters now spoke to me as a joyous celebration of movement and energy. It was the first time a piece of abstract art had stirred my emotions. Like many, I used to dismiss these works as a waste of time and energy. How could anyone find meaning in what looked like a collection of colourful splodges thrown haphazardly at a canvas? Yet here I was, in London's Tate Modern gallery, moved by Pollock's work. So, why are we attracted to paintings and sculptures that seem to bear no relation to the physical world? Little did I know that researchers have already started to investigate this question. By studying the brain's responses to different paintings, they have been examining the way the mind perceives art, and how masterpieces hijack the brain's visual system.

- B** Studies in the emerging field of neuroaesthetics have already offered insights into many masterpieces. The blurred imagery of paintings of the Impressionist era towards the end of the 19th century seems to stimulate a part of the brain which is geared towards detecting threats in our rather blurry peripheral vision. The same part of the brain also plays a crucial role in our feelings and emotions, which might explain why many people find these pieces so moving. Could the same approach tell us anything about modern art, the defining characteristic of which has been to remove almost everything that could be literally interpreted? Although such works often sell for vast sums of money, they have attracted many sceptics, who claim that modern artists lack the skills or competence of the masters before them. Instead they believe that many people claim to like these works simply because they are in fashion.
- C** In an attempt to make sense of how we perceive art, scientists have designed experiments that play with volunteers' expectations of these pieces they are viewing. The volunteers viewed pairs of paintings – either creations by famous abstract artists or the doodles of infants, chimps and elephants. Then they had to judge which they liked best. A third of the paintings were given no captions, while the rest were labelled. The twist was that sometimes the labels were mixed up so that the volunteers might think they were viewing a chimp's messy brushstrokes, while they were actually seeing an abstract piece by a famous artist. Some sceptics might argue that it is impossible to tell the difference, but in each set of trials, the volunteers generally went for the work of the well-accepted human artists. Somehow it seems that the viewer can sense the artist's vision in these paintings, even if they can't explain how we detect the hand of the human artist, nor the reason why the paintings appeal to us. But how does the artist hold our attention with an image that bears no likeness to anything in the real world? Of course, each artist's unique style will speak to us in a different way, so there can be no single answer.
- D** A few studies have tackled the issue of how people process images, a case in point being Robert Pepperell's attempt to understand the way we deal with works which do not offer even the merest glimpse of recognisable object for the brain to latch on to. But they may instead catch our attention through particularly well-proportioned compositions that appeal to the brain's visual system. We may also be drawn in by pieces that hit a specific point in the brain's ability to process complex scenes, which, in turn, may be why certain artists use a particular level of detail to please the brain. According to one psychologist, if there is too little detail we find the work boring, but too much complexity results in a kind of perceptual overload.

Task 2.

Read a newspaper article about people who have difficulty counting. Six sentences have been removed from the article. Choose from the sentences A–G the one which fits each gap (11–16). There is one extra sentence which you do not need to use.

People who can't count

A recent study has discovered that dyscalculia, the mathematical equivalent of dyslexia, affects about 5% of children in Britain. An expert on the subject, Professor Maria Singleton, claims that the government should recognise dyscalculia, inform parents and teachers and provide support for those suffering from it. Unfortunately, there is no simple way of diagnosing dyscalculia and kids with this learning disability are usually labelled unintelligent.

11) _____ Unlike most people, dyscalculics cannot recognise three or four objects unless they count them one by one. The majority of us, if shown three or four similar things, can immediately recognise them. People with dyscalculia have to go through the routine of counting even a small number of objects. For example, they need to count the three books on the table before they can say how many there are.

Dyscalculics have huge problems using numbers at all. They cannot understand, for instance, why two and three makes five. 12) _____ Laboratory experiments have shown that animals such as monkeys and rats have developed a specific region of their brain to deal with numbers and related concepts. It's possible that dyscalculics, though intelligent, have not developed the part of the brain responsible for processing numbers.

Dyscalculics have difficulty with abstract concept of time. 13) _____ If your best friend is always late, he or she might be suffering from dyscalculia. Dyscalculics cannot keep track of time, they never know

how much time they have spent getting ready and how long it will take them to get to work.

You cannot rely on a dyscalculic to give you directions about how to get to the nearest train station. Inability to read maps and orientate themselves is common among dyscalculics. They may take a left turning instead of a right and end up miles away from their intended destination. 14) _____

Research has shown that they behave oddly in social situations like going shopping or having dinner at a restaurant. They never know how much they should tip the waiter or how much money they have got left after a shopping trip. 15) _____ This poor ability in arithmetic can explain why they never know how much change they are due or what kind of budget they need for their summer holiday. Dyscalculia can also affect areas like sports or music. Dyscalculics cannot coordinate the movements of their body or remember the rules of games. They would find it impossible to recall the complicated step sequences of a dance and would rarely choose to do aerobics or play an instrument in their free time.

16) _____ People suffering from dyscalculia can become painters, sculptors or poets. Dyscalculia does not seem to prevent or delay language acquisition. Dyscalculic children acquire language at the same time as, if not earlier than, most children and have no problem learning to read or write. Dyscalculia is a learning disability like dyslexia, not a general indication of intelligence.

A Another problem is not being able to tell, just by looking at two groups of objects, which group contains more objects than the other.

B On top of getting lost, they often misplace things and may spend endless hours looking for their car keys or passport.

C These stories are extremely upsetting for parents and children alike.

D What exactly is this learning disability in arithmetic?

E Dealing with cash, taking money from a cashpoint or using travellers' cheques can cause anxiety and fear.

F This can account for their difficulty in reading schedules and remembering the order in which things happened in the past.

G On the other hand, dyscalculics are very good at creative arts.

TRANSFER YOUR ANSWERS TO YOUR ANSWER SHEET!

USE OF ENGLISH

Time: 20 minutes
(26 points)

Task 1.

For **Questions 1–9**, read the text below and decide which answer (**A, B, C or D**) best fits each gap.

Renewable Energy Comes of Age

The (1)____ ‘alternative energy’ was once used to describe the generation of wind, water and solar power. These days, we tend to (2)____ to them as ‘renewable energy’ and the use of this name (3)____ a real change in their status. These sources of energy, have now become mainstream and are (4)____ to make a significant contribution to energy needs in the future.

Two closely linked developments (5)____ behind this change in status. Firstly, the price of oil and gas has been rising (6)____, reflecting the extent to which reserves of these fossil fuels are becoming (7)____. Equally important is the growing consensus that carbon emissions must be curbed. The scientific evidence for climate change is now irrefutable, and both policy makers and the (8)____ public are finally in agreement that doing nothing about the prospect of global warming is no longer a viable option. Renewable energy represents one real way of (9)____ both issues.

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|----|-------------|---------------|---------------|-------------|
| 1. | A. term | B. title | C. caption | D. label |
| 2. | A. consider | B. refer | C. mention | D. regard |
| 3. | A. regards | B. reproduces | C. reminds | D. reflects |
| 4. | A. set | B. held | C. put | D. stood |
| 5. | A. sit | B. reside | C. lie | D. recline |
| 6. | A. equably | B. serenely | C. habitually | D. steadily |
| 7. | A. depleted | B. decreased | C. depressed | D. debased |
| 8. | A. deeper | B. greater | C. larger | D. wider |
| 9. | A. coping | B. engaging | C. addressing | D. dealing |

Task 2.

For **Questions 10–18**, read the text below and think of the word which best fits each gap. Use only **one word** in each space.

Acoustic Archaeology

Acoustic archaeology studies the role played (10) _____ sound in the ancient world. It examines the connection (11) _____ acoustics and religious or spiritual sites. The main question is whether the acoustics of a place are relevant to the way (12) _____ was used.

Archaeologists have noticed that a number of ancient sites have echoes at very low frequencies. When sounds are as low as this, you feel them in your body, rather (13) _____ just hearing them, and this creates a feeling of happiness and contentment.

If you stand in (14) _____ of the Maya Temple in Mexico and clap your hands, you can hear an echo that sounds (15) _____ the chirp of the Maya sacred bird. This echo (16) _____ produced because the steps of the long temple staircase are at different distances from the listener. Some archaeologists claim that the Maya deliberately constructed this temple (17) _____ achieve this sound. Similar acoustic phenomena have been observed in sites (18) _____ over the world.

Task 3.

For **Questions 19–26**, read the text below. Use the word given in capitals at the end of each line to form a word that fits in the space in the same line.

The Limits of Technology

There are certain moments when technology makes a big impression on you. One such revelatory moment occurred while I was on a camel trek across the Sahara desert.

We were about fifty miles from the nearest human (19) _____ .

Hardly any technological (20) _____ had reached this corner of the globe, or so it seemed. There were just sand dunes as far as the eye could see. And yet, despite our

(21) _____, the silence was suddenly broken by the somewhat (22) _____ noise of a frog. Ignoring for the moment the looks of distinct (23) _____ I got from my fellow travellers, I put my hand in my pocket. The

(24) _____ frog was, of course, my ring tone. And when I pressed the button, there was my boss asking me a simple work question, (25) _____ of the fact that I was thousands of miles away.

We were beyond the limits of civilisation, yet had not gone far enough to avoid an (26) _____ work call from a colleague.

**SETTLE
BREAK**

**ISOLATE
EXPECT
APPROVAL**

ANNOY

REGARD

WELCOME

TRANSFER YOUR ANSWERS TO YOUR ANSWER SHEET!

WRITING

Time: 60 minutes
(40 points)

Your class has listened to a podcast on how more young people can be encouraged to study science. You have made the notes below:

Ways of encouraging young people to study science:

- advertising
- school programmes
- government grants

Some opinions expressed in the discussion:

“You never see positive images of young scientists on TV, just pop stars and actors.”

“Science lessons should be more practical and fun.”

“If young people see science as a career, they’ll want to study it.”

Write an essay (**200 – 250 words**) discussing **two** of the points in your notes. You should **explain which way would be more effective in encouraging young people to study science, providing reasons** to support your opinion.

You may, if you wish, make use of the opinions expressed in the discussion, but you should use your own words as far as possible.

TRANSFER YOUR WRITING TO THE ANSWER SHEET!