Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						4	3	5	7	/	0	1	Signature	

Paper Reference(s)

4357/01

Examiner's use only

Team Leader's use only

London Examinations IGCSE

English as a Second Language

Paper 1: Reading and Writing

Wednesday 4 November 2009 – Morning

Time: 2 hours

Question Number	Leave Blank
Section A	
Section B	
Section C	
Section D	
Section E	
Section F	
Total	

Materials required for examination
Nil

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces or boxes provided in this question paper.
Do not use pencil. Use blue or black ink.
Some questions must be answered with a cross in a box (☒).
If you change your mind about an answer, put a line through the box (~~☒~~) and then mark your new answer with a cross (☒).
Dictionaries may **not** be used in this examination.

Information for Candidates

The total mark for this paper is 100.
There are 20 pages in this question paper. Any blank pages are indicated.
Question numbers are written in bold or bold type in square brackets: e.g. **[36]**.

Advice to Candidates

Write your answers clearly and neatly.
Read all the instructions carefully and keep to the word limits given.
You will be assessed on your ability to organise and present information, ideas, descriptions and arguments clearly and logically, including your use of grammar, punctuation and spelling.

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Section A

Read the internet article below giving advice on study skills and answer questions 1–10. For each paragraph identify which heading, from A–M on page 5, best describes the information in that paragraph by marking (☒) the correct answer. Headings may be used more than once or not at all. If you change your mind, put a line through the box (☒) and then indicate your new answer with a (☒).

WAYS TO EFFECTIVE LEARNING

These tips can help you learn, memorise and improve your study skills.

Paragraph 1

It has been proved that 10-minute bursts of concentration repeated often are much more effective than one long session. So, even if you have only 10 minutes to study, do it. Take a break. Then study for another 10 minutes. This "distributed learning" approach is highly efficient because it reflects the way the brain likes to work.

Paragraph 2

If you start to feel tired after several days of study, have a day off. The reason for doing this is to refresh yourself. However, if you feel bad ("I really should be studying") then your precious rest period has been used to create more stress and your brain will not absorb new data. On days off from studying, really enjoy yourself and do not feel bad about not studying.

Paragraph 3

Do not study if you are angry, distracted, or in a hurry. When the brain is relaxed, it is like a sponge and it naturally absorbs data without effort. If you are stressed, your brain repels data. Forcing yourself to sit and study when your mind is on other things is a complete waste of time!

Paragraph 4

When you learn something new, try to go over the points the same day. If you wait a few days and then make efforts to look over the material, it will seem much less familiar. However, if you look over what you have studied later on in the day, this will tend to cement the information into your brain. It is also important to look over the work at regular intervals over the next few weeks.

Paragraph 5

Why do runners sometimes strap lead weights to their legs? When you overemphasise actions during practice, the final result seems easy. This concept can be applied to studying anything. For example, if you are learning how to spell new words, overstate the sound of the letters to help remember them. Later on, the correct spelling seems obvious.

Paragraph 6

If you require certain things to be present to help you study, always try to make these a priority. For example, do you need special lighting, silence, music, privacy, available snacks etc? Pay attention to what works for you and repeat it each time you study to be successful.

Paragraph 7

It is normal for the brain to forget things. Instead of getting angry, you should be prepared for it and deal with it accordingly. As you learn new things, you find it more difficult to access older information. The trick here is simply to review. Include a quick review in each study session and this will solve the problem.

Paragraph 8

Generally, if you schedule certain times of the day to study, you will get into the habit and accomplish more. If you just try to "fit it in" during your day, the chances are that you will never find the time. An effective way to do this is to mark it down in your calendar as if you have an appointment, like going to the doctor's. For example: *"Tuesday, 3 – 4:30 pm - Study."*

Paragraph 9

One of the main reasons people do not achieve their aims is because they set them too high. If they are manageable, you get into the habit of accomplishing them and gradually you can set higher ones. Also, recognise the difference between long-term and short-term aims. Set your vision on the long-term dream, but focus your day-to-day activity on the short-term.

Paragraph 10

People learn at different rates. Some people learn more quickly but worry that they aren't going fast enough! In contrast, others learn more slowly but are more self-accepting, and end up learning the material in a shorter period of time. This is because they don't waste energy blocking, getting upset, and thinking that they're not good enough. They simply keep moving forward at a slower (but un-blocked) pace.

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Questions 1 - 10

Which paragraph gives you information about the following?

A	**LEARN SOMETHING NEW EVERY DAY**
B	**USE EXAGGERATION**
C	**SET AND UNDERSTAND YOUR VARIOUS GOALS**
D	**STUDY FOR EXAM SUCCESS**
E	**TAKE GUILT-FREE DAYS OF REST**
F	**ACCEPT YOUR SPEED OF LEARNING**
G	**PREPARE YOUR STUDY ENVIRONMENT**
H	**RECOGNISE THE MOOD YOU ARE IN**
I	**STUDY WITH OTHER PEOPLE**
J	**STUDY LITTLE AND OFTEN**
K	**CREATE A DAILY STUDY ROUTINE**
L	**ACCEPT YOU MAY NOT REMEMBER**
M	**RECOGNISE LEARNING IS A LONG PROCESS**

	A	B	C	D	E	F	G	H	I	J	K	L	M
1. Paragraph 1	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
2. Paragraph 2	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
3. Paragraph 3	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
4. Paragraph 4	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
5. Paragraph 5	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
6. Paragraph 6	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
7. Paragraph 7	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
8. Paragraph 8	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
9. Paragraph 9	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
10. Paragraph 10	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒

Section A

(Total 10 marks)

Section B

Read the magazine article below about Professor Ishiguro and his robots and answer questions 11–25.

A day in the life of a robot maker

Hiroshi Ishiguro is a professor at Osaka University. He has created the world's most lifelike robot. ReplieeQ2 seems to breathe, and can speak and flutter her eyelids. Ishiguro lives with his wife and their daughter Risa, 9, near his laboratory in Osaka, Japan.

I usually wake up between 8 and 9 a.m. – it can be as late as 10. That's because I have a home office set up in my apartment and I usually work there every night until 4 a.m. When I get up I don't have much for breakfast but if I'm very busy, I'll have an energy drink before I leave.

I usually arrive at the university at about 10 a.m. It's impossible to keep a regular schedule, as I spread my time between the university, my own robot company, and a government-affiliated robotics laboratory. We have 17 staff and about 80 students at the faculty, and I run it along the lines of an American university: I don't care how young they are – if they're good enough to lead one of our project teams, they're old enough.

Even five years ago it was impossible to predict what robots would be capable of today, and their abilities double every year – though they are still a long way from humans. In June, a team of my VisiON robots won the RoboCup, the robot football world cup. On the pitch they had to avoid other players, find the ball, approach it, identify the target and get the ball into the goal – all completely independently. Our aim is to develop the technology to make a team of robots that can beat the winners of the human World Cup in the year 2050.

I used my daughter as a model when I first made a robot that looked like a human four years ago. Appearance is an important factor. Scientists don't care, but it would be foolish to study only the engineering side of robot technology. It's this kind of fundamental thinking that I want to develop: how will robots interact with people in an intelligent way? Is this the way our lives will be in the future?

We chose to make ReplieeQ2, our adult-size robot, resemble a well-known female Japanese television presenter. It was difficult to copy her face exactly, but we did it with silicone skin that is flexible and life-like. Her upper body and arms are operated by electrical signals so that she moves like a human. She goes through a series of pre-programmed movements and she can also independently 'see' and turn her head to follow a person walking around the room, and her lips move when she talks.

At the last World Expo she was at a reception booth to give a 10-minute presentation on the Expo, and then understand and respond to requests for directions to various attractions on the site. In a test we did, 77% of people did not realise she was a robot, even when they were up close. I'm interested in finding out the emotional reactions people experience when they meet a human-like robot that can speak, shake hands, say goodbye and so on.

My wife and daughter help me – I use them to interact with robots. For the first 30 minutes or so, my daughter was nervous of robots, but she soon got used to playing with them and

talking to them, and in the end she wanted to take one home with her. It had stopped being a toy and become a kind of friend.

Now I am considering two new projects. One would be ReplieeQ3 – a model of myself, with a full body mechanism. I could use this robot as a 'remote existence', controlling it from here and sending it to my other laboratory for meetings or lectures – a far stronger presence than speaking on a telephone or a TV screen.

I usually finish work around 7 p.m. and try to get home for dinner, although I may have to attend official functions. After my daughter and wife have gone to bed, I go back to work. When I do get to bed, I don't sleep well because my mind is continuously thinking. I leave a notebook by my pillow and write down any ideas I get in my dreams. Sometimes the dreams continue the following night. They are not usually very useful and often don't work, but they can trigger other effective ideas.

My mind is very busy. What I really want to know is the answer to the question: 'What does it mean to be human?'

Leave blank

Questions 11–20

Look at the statements below. Decide whether they are True, False, or Not Given according to the text.

Mark (☒) for the correct answer. If you change your mind, put a line through the box (☒) and then indicate your new answer with a (☒).

	True	False	Not Given
11. Professor Ishiguro works at an American university in Japan.	☒	☒	☒
12. Young people manage some university project teams.	☒	☒	☒
13. VisiOn robots can run.	☒	☒	☒
14. According to Professor Ishiguro, scientists are only interested in how a robot functions.	☒	☒	☒
15. ReplieeQ2's movements are all pre-determined.	☒	☒	☒
16. ReplieeQ2 has been mistaken for a person.	☒	☒	☒
17. ReplieeQ2 can shake hands.	☒	☒	☒
18. Professor Ishiguro wants a robot to do some of his work.	☒	☒	☒
19. He has dinner with his family every evening.	☒	☒	☒
20. Professor Ishiguro records his dreams.	☒	☒	☒

Leave blank

Questions 21–25

Match the following statements to the robot it refers to.

A	Professor Ishiguro's first lifelike robot
B	VisiOn robot
C	ReplieeQ2
D	ReplieeQ3

Which robot ….	**A**	**B**	**C**	**D**
21. can blink	☒	☒	☒	☒
22. looks like someone famous	☒	☒	☒	☒
23. looks like a child	☒	☒	☒	☒
24. responds to other robots	☒	☒	☒	☒
25. does not yet exist	☒	☒	☒	☒

(Total 15 marks)

Section B

Section C

Read the article below on deep-sea life and answer questions 26–40.

Life in the deep

Miles beneath the ocean surface, where scientists once thought that life could not exist, thousands of species thrive. There are no plants, no light and very little oxygen, but there is life. The Monterey Bay Aquarium Research Institute (MBARI) is working to learn more about the mysterious creatures of the Monterey trench, a deep-sea canyon that extends deep underwater but is close to land near Monterey, California. To find water this deep sometimes takes days of travel over water. In Monterey, the trench is easy to get to.

MBARI sends robotic vessels 20,000 feet underwater to gather images of these strange sea creatures. Called submersibles, these vessels are equipped with specialised underwater cameras and 3,000-watt light bulbs. A 3,000-watt bulb is 50 times as bright as an ordinary household light bulb!

One MBARI submersible, the Ventana, has a manipulator arm so strong and precise that it can pick up a small coin and fold it in half. Underwater, the manipulator arm is used to gather specimens and place equipment on the sea floor. The water pressure at these depths is equal to more than 17,000 buckets of water sitting on your head. It's enough to compress a Styrofoam cup into a two-inch-tall miniature. To operate in the deep sea, the $2.5 million submersible is specially constructed, using extra strong and lightweight titanium metal.

The animals that live in the deep sea also have to adapt their parts to survive the dark, cold environment. Most are made almost entirely of solid and liquid matter, with no air pockets anywhere. That's because water pressure only affects the empty places in the body, places where there is air. For example, when you're underwater at the bottom of a pool, your ears hurt from the water pressure, but not your arms or legs.

Instead of the air sacs that fish use to control their buoyancy, some deep-sea creatures use chemical changes in their blood. Many creatures have enlarged eyes to help them see in the dark. Some produce their own light, called bioluminescence, to help attract prey or find a mate.

The harsh deep-sea environment also forces deep-sea creatures to be creative when it comes to finding their next meal. Some hunt other deep-sea animals, while others live on "marine snow," organic waste from above that's been recycled over and over again and drifts down into the depths.

Unlike almost any other place on Earth, some parts of the deep sea don't depend on the sun as the energy source for the food cycle. In these areas, the life cycle begins with chemosynthesis – chemicals being eaten by bacteria, then sea creatures eating the bacteria. The chemicals come from "cold seeps," or ocean floor vents. Chemosynthesis, or the creation of energy from chemicals, replaces photosynthesis in this pitch-black environment.

But when a whale carcass falls to the deep-sea floor, the local wildlife takes a break from their bacterial diet. An entire ecosystem develops around this huge source of food. The food that creatures can obtain from one "whale fall," as marine biologists call them, is equal to thousands of years of marine snow. Crabs, sharks, and other scavengers feast on

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the remains. When the rest of the whale has been consumed by other animals, specialised worms called Osedax, which were first identified by an MBARI scientist, take advantage of the skeleton itself. The Osedax form giant colonies that look like a red shag carpet spread over the bones.

Scientists at MBARI study subjects as tiny as the Osedax and as huge as global climate change. Seemingly small changes in the global climate can have major effects on the ecology of the deep sea. For example, Atlantic Ocean currents coming from the Bahamas are warm and they stay near the top of the water. By the time the water reaches Europe it's cooled off and the cold water sinks to the deep sea. Since the water's been near the surface so long, it has the oxygen in it that animals need to live. However, global warming could cause the water to stay warm so long that it might never reach some areas of the deep sea. The creatures living in these areas would die, since no oxygenated water would reach them.

Questions 26–40

Complete the following sentences below. Write no more than TWO words and/or numbers taken from the text.

26. The institute's research is focused on a ..... close to the coast.

27. The institute has ..... to collect data from deep under water.

28. The Ventana uses a ..... to collect sea creatures.

29. The institute's underwater equipment is made of ..... to resist very high pressures.

30. The deep-sea creatures don't have ..... . This allows them to live at great depths.

31. Some creatures maintain their ..... by altering the chemicals in their bodies.

32. Certain deep-sea creatures have ..... features which are adapted to the dark environment.

33. Some creatures make use of ..... when hunting for food.

34. The ..... that falls to the bottom of the ocean, feeds many deep-sea creatures.

35. Energy is formed at this depth by a process called ..... .

36. The bacteria obtain chemicals from ..... located on the ocean bed.

37. A whale fall signifies a change in ..... for many deep-sea creatures.

38. When a dead whale falls to the floor of the ocean a new ..... forms.

Leave blank

39. The ..... is the last creature to feed on a dead whale.

40. Although these creatures do not depend on the sun, they rely on ..... to survive at this depth.

Section C

(Total 15 marks)

TOTAL FOR READING: 40 MARKS

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Section D

Your school has decided to support a charity* this year.

Write an article for the school newspaper.

- Give details of your chosen type of charity
- Say why your school should support it
- Suggest two ways that the school could raise money for that charity

* Charity – An organisation that gives money, goods or help to people who are poor, sick or in need of support.

You should write between **100 and 150 words**.

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Section D

(Total 20 marks)

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Section E

Together with a classmate, you are doing a project on a famous person. You receive this email from your classmate.


To: Lee@netnet.com

Cc:

Bcc:

Subject: Project

We need to get started on our project, 'A Famous Person', as it has to be handed in next month.
Do you have any suggestions on who we should choose? Don't forget that we have to cover three main areas of his or her life.
We will need to get organised, so tell me which areas you want me to do.
I think we should get together to work on it. Any suggestions? I'm free all of next week.

Thanks

Andy

Reply to this email, answering all the points raised.

You should write between **100 and 150 words**.

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Section E

(Total 20 marks)

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Section F

You are doing a project on food. Read the text below about Clarence Birdseye, an early pioneer of the frozen food industry, and write a summary for your teacher.

Your summary must include:

- a description of the processes created by Birdseye;
- the advantages of his frozen foods;
- the reasons why they were slow to be accepted.

CLARENCE BIRDSEYE

Clarence Birdseye is generally acknowledged as the father of the frozen food industry, although he was not the first person to freeze food. He was, however, the first to fully exploit its commercial potential, and the first Birds Eye frozen food reached the shelves on 6th March 1930.

'That first winter I saw natives catching fish in 50° below zero, which froze stiff as soon as they were taken out of the water. Months later, when they were thawed out, some of those fish were still alive.' Clarence Birdseye's pioneering ideas about frozen food were inspired by his observations of age-old Inuit practice during a US government survey of fish and wildlife in Newfoundland, Canada, between 1912 and 1915. Birdseye also learned to preserve vegetables by freezing them in water.

However, Birdseye was not the first; apart from the Inuit practices, meat had been frozen for transportation since the mid-19th century, frozen fruit had been sold along with ice creams from as early as 1905, and a Canadian government department began marketing frozen fish (the first individually packaged frozen food) in 1929. But Birdseye pioneered two revolutionary new ideas. He discovered that a slow freezing process created large ice crystals, which in turn made the product soggy when it was thawed, so he devised a fast-freezing process that did not harm the food. And he also came up with the idea of freezing prepared food and vegetables and portions of fish, an idea later marketed as, 'The modern way to shop and cook', with advertisements describing how the foods were 'quick-frozen so their freshness, flavour and goodness is sealed tight. All prepared ready to cook. No cleaning. No tiresome kitchen chores. That's all been done for you.'

Birdseye set up the Frosted Food Company in 1924 to put his ideas into practice, and sold out in 1929 to the Postum Company (later the General Foods Corporation). Postum launched the first range of quick-frozen food in 1930, having agreed that the brand name for its products would be Birds Eye. At first, frozen food was slow to catch on – shoppers did not think to look in the ice-cream cabinets where it was kept, it was relatively expensive and, in Britain, few households had freezers. However, frozen fish fingers have been described as the greatest food revolution since the discovery of fire, and frozen food, for hundreds of years part of the Inuit tradition, is now an indispensable part of modern living.

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Use your own words where possible. You should write between **100 and 150 words**.

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Section F

(Total 20 marks)

TOTAL FOR WRITING: 60 MARKS
TOTAL FOR PAPER: 100 MARKS

END