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0510/11

October/November 2015

1 hour 30 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

Do not use staples, paper clips, glue or correction fluid.

DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

Dictionaries are **not** allowed.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

This document consists of **13** printed pages and **3** blank pages.

Exercise 1

Read the following article about creative designers in South Africa, and then answer the questions on the opposite page.



CREATIVE RECYCLING

Nowadays, everybody needs to be aware of the importance of protecting the environment. There are many original ways of recycling the things that other people throw away. Creative designers in South Africa are making new and interesting objects from rubbish, and helping local communities at the same time.

Bottles to beads

Young children in the north of the country collect empty glass bottles from the local community and sell them to designers in the south who give them new life as necklaces or even handles for knives, forks and spoons. The bottles are first broken into small pieces of glass, then crushed into powder and heated to a high temperature in an oven. It is dangerous work and it takes a long time. The glass is then melted by the heat and shaped into beads, which are finally attached to wire or string to create the necklaces, or handles for knives, forks and spoons.

Skateboards to sunglasses

One designer in Durban, who used to build skateboard ramps, now recycles old skateboards and turns them into sunglasses of different colours. He says, "Throwing away old skateboards is a huge waste. Top quality boards are made from wood from maple trees, which take years to grow. It is such a pity that thousands of these boards are thrown away each year. The wood is very light and so is ideal as frames for sunglasses."

Tyres to furniture

One day, a designer from Cape Town noticed piles of unwanted car tyres that had been left in a park. He thought about different ways that he could recycle them. During the next few months, he created a business by using the old tyres to make stools, chairs and tables. He says, "I design the furniture and it's made by friends who need the work and have the imagination to try something new." The workers can also cut the tyres to make smaller items, such as fruit bowls, vases, sandals and ornamental animal heads.

Buttons to rings

A designer in Johannesburg was looking through some old boxes when she found a treasure – thousands of beautifully made old buttons in many colour combinations. Most astonishing of all was that they were still attached to the original cards on which they were imported from Europe in the 1950s.

"I put one on my finger and it looked fantastic as a ring," she says. Since then, she has sold large numbers of these button rings at craft markets in France. Her biggest orders, however, come from a large company in Japan.

Benefits for all

Many of these companies and enterprises do not only create new and original pieces from unwanted everyday items, they also create jobs for many local people. These people work together in co-operatives, and so they all share the profits.

- (a) How are designers in South Africa helping the environment?
.....[1]
- (b) Where in South Africa do they create necklaces from bottles?
.....[1]
- (c) What are the disadvantages of working with glass bottles? Give **two** details.
.....
.....[1]
- (d) What is the last stage in the process of making necklaces?
.....[1]
- (e) Why is maple wood suitable for making sunglasses?
.....[1]
- (f) Where does the Johannesburg designer export most of her work to?
.....[1]
- (g) How do people benefit from working in a co-operative?
.....[1]

[Total: 7]

Exercise 2

Read the following article about ways of keeping wildlife away from airports, and then answer the questions on the opposite page.

WILDLIFE AT AIRPORTS

The number of reported collisions between aircraft and wildlife is increasing throughout the world. Airport authorities and governments in many countries are worried, and are trying to reduce the risk to aircraft when they are landing or taking off.

Nowadays, statistics show that there is a steady rise in incidents involving aircraft and wildlife. This could be because aircraft are more powerful, but what is certain is that the problem has increased because more people are flying. To improve safety, a range of new measures is being tested at airports around the world.

Birds are the biggest threat. There have been incidents of birds smashing into the pilot's windscreen on take-off. Airport officials have introduced a variety of measures which are designed to deter birds and animals from living near the runways. For example, a number of airports are experimenting with planting grasses that birds do not like to eat. This is particularly effective for geese, but other birds can be discouraged by removing ponds and lakes from the area surrounding the airport, and cutting down trees that bear fruits or seeds. "If you don't have the attraction of food, then the birds won't come here," says one airport manager. In addition, certain airports have replaced the grass alongside the runways with stones or concrete. This means that small rodents have nowhere to live and so the large birds that feed on them are not attracted to the area.

Another method is to use the noise from loud guns to scare away birds. The problem with this approach is that a member of the airport staff has to go out and check the guns that create the noise. In addition, birds can very soon get used to the regularity of the sound. Controlling birds such as hawks is even more difficult because they hover in the sky and cause problems for aircraft in the air. There have been incidents where these birds have been sucked into aircraft's engines.

An alternative way of solving the problem of birds is to trap and relocate them to new homes. Traps are shaped like A-frame houses. The top of the roof is held open with a stick. The bird lands on the stick, which collapses and the bird falls inside. The roof shuts quickly, trapping the bird, which can then be transported to a safe area far away.

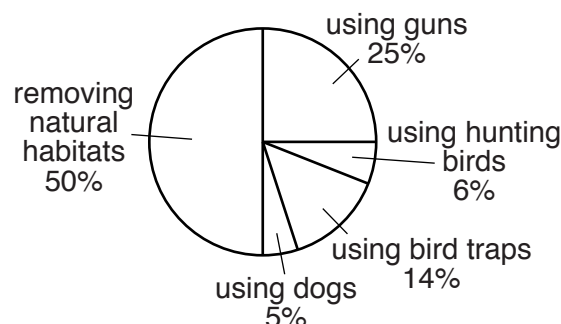
Then there is Meg. Meg is a border collie dog who patrols an airport in southwest Florida. Rainwater pools at the edges of the runways attract groups of water birds, which often delay the departure of aircraft. Meg works seven days a week, running into bushes that are too dense for vehicles, and crossing wetlands that are too difficult for people to walk through. Meg's job is not to catch the birds but to scare them away from the runways, and she is very effective because the birds cannot predict her movements.

A less common method is to use certain species of hunting birds to chase other birds in the air. Birds, such as falcons, are released just before flight departures and arrivals. The falcons scare the other birds, which make warning calls and then fly away.

Animals on the ground also pose problems. Deer, for example, have jumped over a fence three metres high and have run across the runway in front of aircraft. Foxes can dig tunnels under airport security barriers and cause damage to the electrical systems.

It seems that no one way is totally successful in preventing incidents with wildlife at airports. Airport authorities are continuing to work with experts to try and reduce the risk of these wildlife problems.

METHODS USED TO REDUCE WILDLIFE AT AIRPORTS



(a) Why are governments concerned about wildlife at airports?

.....[1]

(b) What has definitely caused more wildlife incidents at airports?

.....[1]

(c) What is being done to stop geese from living at airports?

.....[1]

(d) How do concrete areas at airports affect birds?

.....[1]

(e) What disadvantages are there to using guns? Give **two** details.

.....

.....[1]

(f) What happens to birds after they are trapped?

.....[1]

(g) How is Meg more effective than humans on difficult ground? Give **two** details.

.....

.....[2]

(h) Why is Meg particularly good at frightening birds?

.....[1]

(i) How do birds react to the falcons? Give **two** details.

.....

.....[1]

(j) According to the chart, which is the most common way to reduce wildlife at airports **and** which is the least common?

most common

least common[1]

[Total: 11]

Exercise 3

Alexia Nicolaou is 18, lives in Cyprus and has just returned from an organised visit with a group of boys and girls from her class. They all study at the Spyros English College, which is situated at 14 Loizou Askani Street, 3311 Limassol. The visit was part of a geography project to study the rock formations, rivers and waterfalls at Troodos, a mountain area about 60 kilometres from her home town. The group had arrived at the hostel on 29 September and stayed for five days.

Alexia was the oldest in the group. At the end of the trip, she was asked by her geography teacher to complete the questionnaire from the hostel where the group stayed for four nights. She was pleased that her teacher asked her because she likes taking on extra responsibility. She thought that the hostel was excellent in all respects, especially the comfort of the rooms. Alexia and the 13 other students in the group all agreed that the hostel was good value for money. They paid 50 euros each, which included all meals and transport to and from the hostel by college bus.

This was the first time that her college had organised a trip to the region. Her teacher had learnt about the hostel through a publicity brochure that had been sent to the college. He told Alexia that he would very much like to be informed about the hostel's future programme and he could be contacted by email on spyrencoll@com.cy at the college.

All the students thought that the trip was fantastic, although it had not started well. They had spent about one hour in the college bus trying to find the hostel, which was a long way from the nearest town. Alexia felt that it would be a good idea to suggest to the hostel manager that in future he should send a detailed map showing the best route to take.

Alexia was happy to complete the questionnaire because she was sure that the geography department would want to visit the hostel again next year with another group of students.

Imagine you are Alexia. Fill in the group questionnaire on the opposite page, using the information above.

Troodos Hostel

Group Questionnaire

Section A: Group details

School/College name:

Address:

Email:

Section B: Visit details

Arrival date:

Length of stay:

Number in group: (please tick) 1–8 [] 9–16 [] 17–24 [] 25 and above []

Details of group: (please underline) BOYS ONLY GIRLS ONLY MIXED

How did you travel to the hostel?

Section C: Other details

How did you hear about us?

Would you like to receive details of next year's programme? (please delete) YES / NO

Section D

In the space below, write **one** sentence about what you liked about the hostel and **one** sentence with a suggestion on how we could improve.

[Total: 14]

Exercise 4

Read the following article about a race across Australia in cars powered only by solar energy, and then complete the notes on the opposite page.

FOUR DAYS WITHOUT FUEL

The World Solar Challenge Race is unlike any other car race you can imagine. The route passes right across the deserted Australian outback, and the cars themselves resemble something from a science-fiction film. They glide silently, powered only by solar energy, along the dusty highways.

This race does not last for just a few hours, it goes on for days. The cars start in Darwin, in the far north of Australia, and the fastest usually cross the finish line about four days and 3000 kilometres later in Adelaide, on the south coast.

One of the cars which took part recently, named *Stella*, publicised as the world's first 'family solar car', was created by students at a university in Holland. *Stella* has a square shape to maximise space inside and also has a place to store luggage in the back. The car is covered in reflective solar panels that absorb the rays of the sun and provide the power for the battery. It also runs on narrow tyres to reduce weight.

The World Solar Challenge Race was first organised by a Danish environmentalist who built the first solar-powered car in 1982. The aim of the race is to promote new ideas in solar technology and electric car design which could one day be used in more conventional vehicles. In fact, major car manufacturers are already using solar panels to power the lights in normal cars. One multi-national company has produced a car with a solar panel pack which works the air conditioning. They have also been able to develop an ignition system which operates by using solar power. In addition, an environmental company is able to provide solar panels for garage roofs so that drivers can recharge the latest range of electric cars at home.

"Driving on public roads for such a long distance in a normal car can be very dangerous. It is particularly dangerous in lightweight solar vehicles like these that can reach speeds of 160 kilometres per hour," said Chris Jones, the event director.

The entire route is open for ordinary traffic during the race and long, heavy trucks constantly block the road. The car drivers are only allowed to race during daylight hours each day, after which they have to pull off the road and set up camp for the night. If they drive in the dark, there is an increased risk of collisions with kangaroos. Along the route, drivers can get updates on their race position and do basic maintenance, but they are not allowed to do anything more than that.

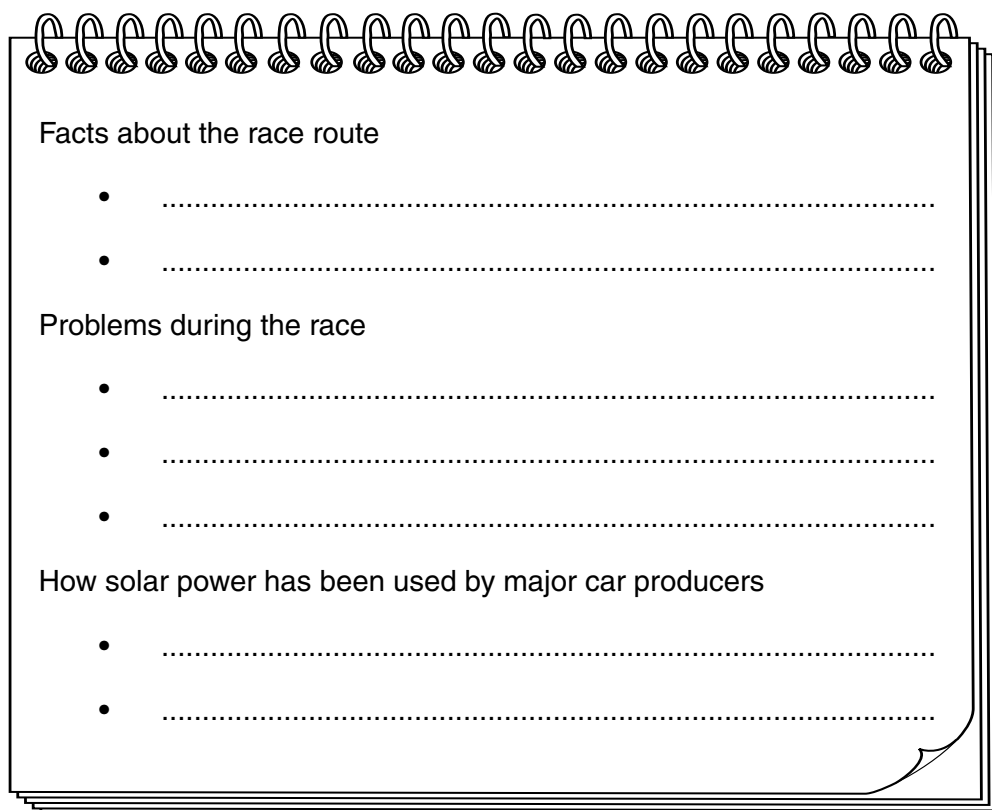
In 2013, 38 cars started the challenge, but many did not complete it. One car was blown off the road by a gust of wind and some could not continue because their car's mechanical parts were covered in dust from the roads in the outback.

The winner was a Dutch team which completed the route in 36 hours at an average speed of 90 kph. At the end, the weather played a decisive role. With only 50 kilometres to the finish line, rain came down heavily and the Brazilian team, which was in second place at the time, had to stop and recharge their car's battery.

It seems that sometimes even advanced technology cannot compete with the forces of nature.

You are going to give a talk about solar power and the World Solar Challenge Race to your local environmental group. Prepare some notes to use as the basis for your talk.

Make short notes under each heading.



Facts about the race route

-
-

Problems during the race

-
-
-

How solar power has been used by major car producers

-
-

[Total: 7]

Exercise 5

Imagine that you have given your talk to your local environmental group. Now your teacher wants you to follow this up with a summary for homework.

Look at your notes in Exercise 4. Using the ideas in your notes, write a summary about the World Solar Challenge Race.

Your summary should be about 70 words long (and no more than 80 words long). You should use your own words as far as possible.

.....

.....

.....

.....

.....

.....

.....

.....

[Total: 5]

Exercise 6

Last week, you received a phone call and you had to leave your home in a hurry.

Write an email to a friend about what happened.

In your email you should:

- explain what the phone call was about
- say what happened after you left your home
- describe how you felt when you returned.

The pictures above may give you some ideas, and you should try to use some ideas of your own.


Your email should be between 100 and 150 words long.

You will receive up to 7 marks for the content of your email, and up to 6 marks for the style and accuracy of your language.

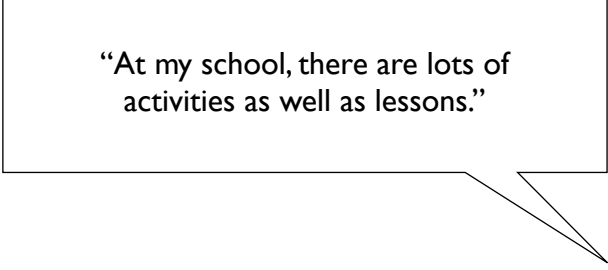
Exercise 7

Some people say that you learn more out of school than you do at school.

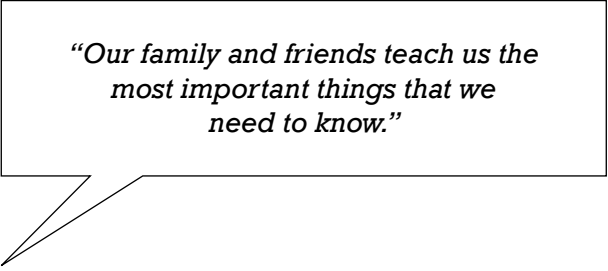
Here are some comments from your friends:



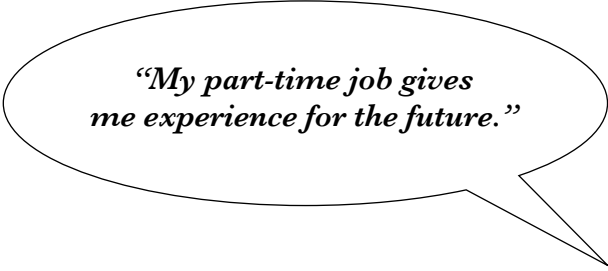
"School helps us to get the qualifications we need for life."



"At my school, there are lots of activities as well as lessons."



"Our family and friends teach us the most important things that we need to know."



"My part-time job gives me experience for the future."

Write an article for your school magazine, giving your views.

The comments above may give you some ideas, and you should try to use some ideas of your own.

Your article should be between 100 and 150 words long.

You will receive up to 7 marks for the content of your article, and up to 6 marks for the style and accuracy of your language.

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