

March 2016/2<sup>nd</sup> year  
English Exam No2

Name:

Group:

## THE DISCOVERY OF THE DNA

Throughout the 20th century, many scientists have tried to study deoxyribonucleic acid (DNA). In the early 1950s two scientists, Rosalind Franklin and Maurice Wilkins, studied DNA using x-rays. Franklin produced an x-ray photograph that allowed two other researchers, James Watson and Francis Crick to work out the 3D structure of DNA. The structure of DNA was found to be a double helix.

In 1962 Crick and Watson, along with Wilkins, received the Nobel Prize in Physiology or Medicine for their discovery. Rosalind Franklin had died four years earlier and her pivotal contribution wasn't acknowledged until much later.

The genetic information in an organism is called its genome. The Human Genome Project, or HGP for short, was started at the end of the last century. It was very ambitious and had several aims, including; working out the order or sequence of all the three billion *base pairs* in the human genome, identifying all the *genes* and to develop faster methods for sequencing *DNA*.

The sequencing project was finished in 2001, and work continues to identify all the genes in the human genome. The project involved scientists from 18 different countries and showed how scientists collaborate. The HGP used the DNA of several people to get an average sequence, but each person has a unique sequence, unless they have an identical twin.

Information about a person's DNA can be useful for forensic science. Genetic fingerprinting was invented in 1985 by Sir Alec Jeffreys at the University of Leicester. It uses some of the small differences between the DNA from different people to make a picture rather like a barcode. If enough parts of the DNA are tested, it is very unlikely that two identical DNA fingerprints would belong to two different people. This makes

the method very useful for matching samples found at the scene of a crime to people suspected of committing the crime.

DNA evidence is especially valuable for investigating violent crimes such as homicides biological evidence may also be discovered and collected in less violent crimes scenes such as vehicle break -ins, but because laboratory resources are limited, the analysis and comparison of DNA evidence is typically conducted in the following types of cases: homicides, robberies, missing and unidentified persons.

**Section One: Reading comprehension (6points)**

**Activity One:** Answer the following questions from the text **(02pts)**

1 What was HGP discovered for?

.....  
.....

2 Why did the project of DNA involve after 2001?

.....  
.....

**Activity Two:** Are these statements True/False according to the text? **(02pts)**

1- The work on genes was carried out after the discovery of sequencing DNA. ....

2- Genetic fingerprinting was discovered first. ....

**Activity Three:** Find from the text the synonyms of the following words/expressions **(02pts)**

Breakthrough=.....

Implied=.....

Not known with certainty=.....

Concerned with laws= .....

**Section Two: Grammar (9points)**

**Activity One:** Put the verbs in the correct tense. Use the SIMPLE PAST or the PRESENT PERFECT **(03pts)**

1. .... he..... (finish) his work yet?
2. .... he ..... (finish) his yesterday?
3. The train ..... (just / leave).
4. .... you ..... (ever / be) in a TV studio?
5. .... you ..... (enjoy) the party last night?
6. She ..... to me. (not speak / for two week)

**Activity Two:** Rewrite the sentences into passive voice. **(03pts)**

- 1 Many people begin new projects in January.

.....  
.....

- 2 The Chinese discovered acupuncture thousands of years ago.

.....  
.....

- 3 They have finished preparations by the time the guests arrived.

.....  
.....

**Activity Three:** Add the right suffix to the words between brackets to get meaningful sentences: **(03pts)**

1. He is probably one of the most .....football players in the world.  
(Fame)

2. We have decided to have our lessons in the garden as it was a lovely .....day ( sun )

3. John's toothache was quite .....and he had to go to the dentist.  
(pain)

4. Look out, that plant is (poison) .....

5. It looks like we'll have (rain) ..... weather today.

6..... (Employ) went on strike because they are unsatisfied with their working conditions.

### **Section Three: Writing (05pts)**

#### **Choose one topic**

- Write a paragraph about a discovery or an invention.
- What is the utility for discovering the DNA?

# Correction

## Section one: reading comprehension

**Activity one:** answer the following questions from the text

- 1- working out the order or sequence of all the three billion *base pairs* in the human genome, identifying all the *genes* and to develop faster methods for sequencing *DNA*.
- 2- project involved scientists from 18 different countries and showed how scientists collaborate.

Are these statements true/false?

- 1- True
- 2- False

**Find from the text the synonyms of the following words/expressions (03pts)**

Breakthrough=discovery

Implied= involved

Not known with certainty= suspected

Concerned with laws= forensic science

## **Section Two: Grammar**

**II)- Put the verbs in the correct tense. Use the SIMPLE PAST or the PRESENT PERFECT(04pts)**

- 1- Has he finished his work yet?
- 2- Did he finish his work yesterday?
- 3-They train has just left.
- 4-Have you ever been in a TV studio?
- 5 -Did you enjoy the party last night?

6- She hasn't spoken to me for two weeks

**Write the sentences into the passive voice.**

- 1- New projects are begun in January.
- 2- Acupuncture was discovered by the Chinese thousands of years ago.
- 3- Preparations have been finished by the time the guests arrived.

**Activity Three:** add the right suffix to the words between brackets **(03pts)**

- 1 He is probably one of the most .....football players in the world.  
(Fame) **famous**
- 2 We have decided to have our lessons in the garden as it was a  
lovely .....day ( sun ) **sunny**
- 3 John's toothache was quite .....and he had to go to the dentist.  
(pain) **painful**
  
- 4 Look out, that plant is (poison) ..... **poisonous**
  
- 5 It looks like we'll have (rain) .....**rainy** weather today.
  
- 6 ..... (Employ) went on strike because they are unsatisfied with  
their working conditions. (Employees)