

**GENERAL CERTIFICATE OF SECONDARY EDUCATION
HISTORY A (SCHOOLS HISTORY PROJECT)**

Paper 2 (Medicine Through Time)

WEDNESDAY 11 JUNE 2008

1935/21

Morning
Time: 1 hour 30 minutes

Additional materials (enclosed): None

Additional materials (required):
Answer Booklet (8 pages)



INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the spaces provided on the Answer Booklet.
- Read each question carefully and make sure you know what to do before you start each answer.
- Study the Background Information and the sources carefully. You are advised to spend at least ten minutes doing this.
- Answer **all** the questions.
- Write your answers, in blue or black ink, in the Answer Booklet.
- Write the numbers of the questions you have answered in the box on the front of the Answer Booklet.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is **50**.

This document consists of **9** printed pages and **1** blank page.

FOLD OUT THIS PAGE

Study the Background Information and the sources carefully. You are advised to spend at least ten minutes doing this.

In answering the questions, you will need to use your knowledge of the topic to interpret and evaluate the sources. When you are asked to use specific sources you must do so, but you may also use any of the other sources if they are relevant.

Answer ALL the questions.

1 Study Source A.

What can we learn about Harvey from this source? Use the source and your knowledge to explain your answer. [6]

2 Study Source B.

How useful is this source as evidence about Harvey? Use the source and your knowledge to explain your answer. [9]

3 Study Source C.

Why do you think Harvey had this diagram drawn? Use the source and your knowledge to explain your answer. [9]

4 Study Source D.

How far does this source mean that Harvey could not have been a great medical scientist? Use the source and your knowledge to explain your answer. [8]

5 Study Source E.

This source is about events after Harvey's death. Do you agree that it therefore tells us nothing of value about the impact of Harvey's work? Use the source and your knowledge to explain your answer. [8]

6 Study all the sources.

'Harvey's work was of huge importance in the development of medicine.'

How far do the sources on this paper support this view? Use the sources and your knowledge to explain your answer. Remember to identify the sources you use. [10]

THE MEDICAL RENAISSANCE

HOW IMPORTANT WAS WILLIAM HARVEY?

Background Information

William Harvey became a doctor after studying medicine at Padua, the most famous medical school at the time. When he returned from Padua he worked as a doctor in London. In 1607 he joined the Royal College of Surgeons and became chief physician at St. Bartholomew's Hospital. In 1615 he was made a Fellow of the College of Physicians. From 1618 he was also physician to King James I and then King Charles I.

In a lecture in 1616 Harvey talked of the 'perpetual motion of the blood in a circle'. In 1628 he set out his views on the circulation of the blood around the body in his book '*On the Movement of the Heart and Blood in Animals*'. Harvey's views were very different to those of Galen who had believed that there were two different types of blood, one originating in the liver and one in the heart. As a result, Harvey's work created a great deal of debate.

How important was William Harvey in the development of medicine?

SOURCE A

Before Harvey's time it was known that the blood moved, but not that it circulated. Furthermore, the liver was regarded as the main organ for producing blood.

The genius of Harvey led him far beyond the work of those who came before him. He altered the entire thinking on the blood system and proved the heart to be the central organ. Step by step he built up his great discovery. He proved each advance by carrying out experiments, so that every objection to his new idea could be easily rejected.

A comment on Harvey's work published in the mid-twentieth century.

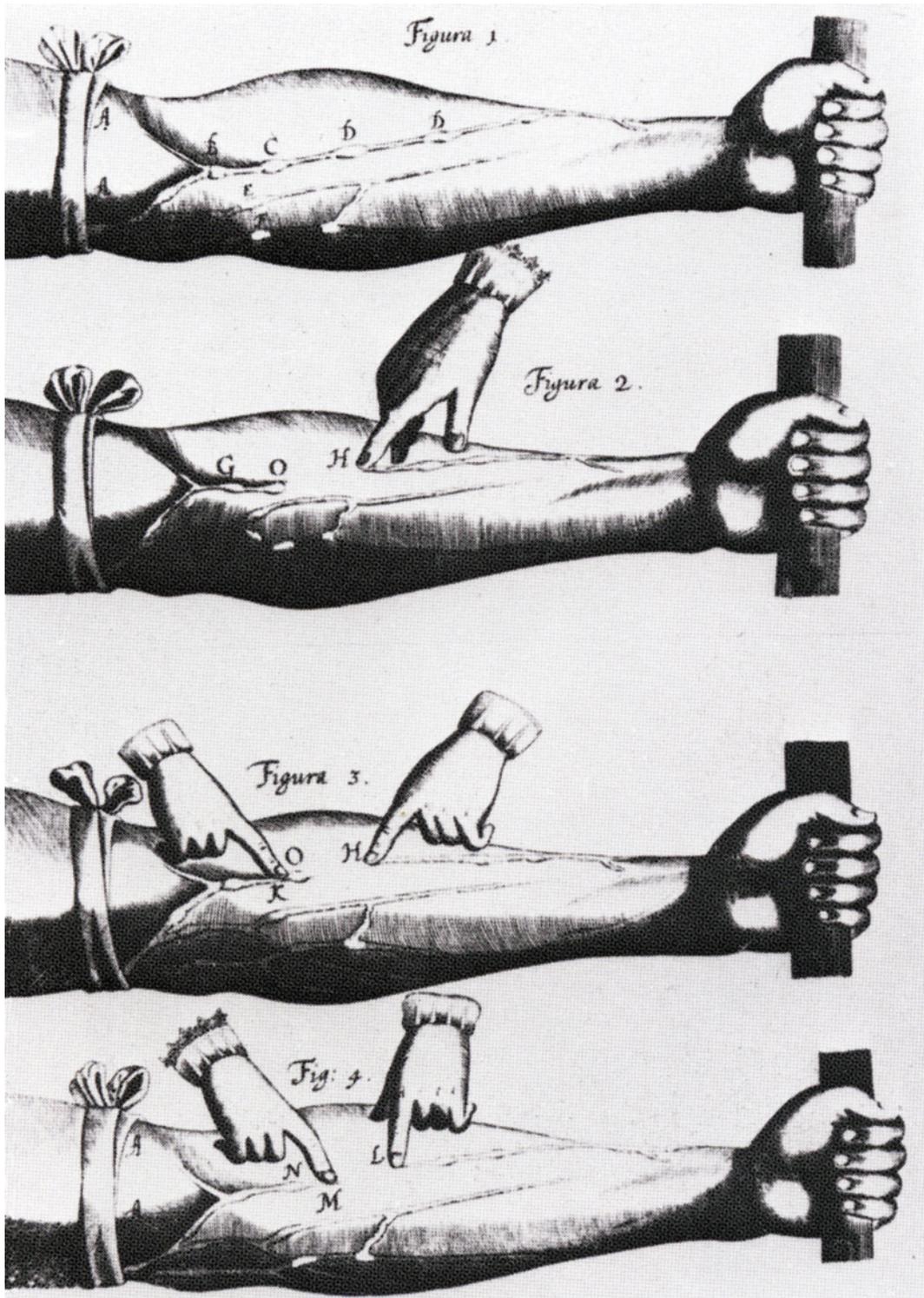
SOURCE B



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A painting of William Harvey discussing his experiments with King Charles I and his son. It was painted in the mid-nineteenth century and hangs in the Royal College of Physicians in London.

SOURCE C



A diagram from Harvey's book 'On the Movement of the Heart and Blood in Animals', published in 1628. It shows the direction of blood flow through veins and arteries. Harvey had the diagram drawn to illustrate the experiment which proved his theory.

SOURCE D

He loved to be in the dark and told me that was how he concentrated best. He had a house in Surrey where he had caves made so that he could meditate in them in the summer.

When he was young he wore a dagger (which I suppose was the common fashion in those days), but was too likely to draw out this dagger upon every slight occasion. I have heard him say that after his book on the circulation of blood came out, common people thought he was mad. He kept a pretty young wench, whom I guess he made use of.

In 1654 he bought a house in London and would often sit on the roof to think. He had painful feet caused by gout and, if it was frosty, he used to sit on the roof with his legs bare. He would put his feet in a bucket of water until he was almost dead with cold.

I was at his funeral and helped to carry him into the tomb.

A description of Harvey by John Aubrey. Aubrey was a famous seventeenth-century gossip, who liked to collect amusing details about his subjects and showed little respect for their reputations.

SOURCE E

On 2 February, King Charles felt some unusual disturbance in his brain, soon followed by loss of speech and fits. Two of the king's physicians opened a vein in his right arm and drew off sixteen ounces of blood. After further discussions, eight ounces of blood were withdrawn.

To free his stomach of all impurities, they gave him an emetic and an enema. They also gave pills to drain away the humours. To make sure they had tried everything, they also shaved his head and applied blistering agents all over it.

*A description of the treatment of King Charles II in February 1685, written by one of his doctors, Sir Charles Scarborough. He then tells us that over the four days they also gave the king 'bezoar stone' (material found in a goat's stomach, which people thought was an antidote to poison).
The king died on 6 February.*

Emetic: a potion to make the patient vomit

Enema: a treatment for constipation

SOURCE F

'Many people are against my theory on circulation because they are unable to solve medical problems with it. They cannot use it in curing diseases or working out the causes of symptoms.'

Harvey commenting on the impact of his work.

SOURCE G

Although he made a great contribution to our understanding of the human body, his impact on the practice of medicine was limited. At the time, his experiments did not advance understanding of disease. He proved that a person's blood was continually recycling, but medicine at the time was still based on the humours and treatments such as bleeding, purging and vomiting.

A comment on the importance of Harvey's work from a recent book on the history of medicine.

Copyright Acknowledgements:

- Source A Source: extract from *The History of Medicine*, by D Guthrie, published by Thomas Nelson & Sons, 1945.
Source B © Visual Arts Library (London) / Alamy.
Source C Diagram from *On the Movement of the Heart and Blood in Animals*, by W Harvey, published in 1628; reproduced by kind permission of the World Health Organisation.
Source D Source: extract from *Aubrey's Brief Lives*, editor O Dick, published by Secker & Warburg, 1949.
Source E Source: extract from *Medicine Through Time*, by the Schools History Project, published by Holmes & McDougall, 1976.
Source G Source: extract from *Medicine – An Illustrated History*, p.34, by Lyons and Petrucelli, published by Harry N Abrams, New York, 1978.

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