



EDX.MED1 Medicine in Britain, c1500-c1700: The Medical Renaissance and Ideas About the Cause of Disease

EDEXCEL 1HI0 · Calculators not allowed · about 65 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Write in full sentences for Questions 15, 16 and 17. You are advised to spend about 65 minutes on this pack.

- 1** Name the Flemish anatomist whose dissections of human bodies, published in 1543, corrected several of Galen's errors about human anatomy.

(Total for Question 1 is 1 mark)

- 2** Give the title of the book, published in 1543, in which Vesalius set out his anatomical findings.

(Total for Question 2 is 1 mark)

- 3** State one specific error in Galen's descriptions of human anatomy that Vesalius corrected through his own dissections.

(Total for Question 3 is 2 marks)

- 4** Name the technology, in wide use in England by the sixteenth century, that allowed Vesalius's detailed anatomical illustrations to be copied accurately and spread across Europe.

(Total for Question 4 is 1 mark)

- 5** Name the English physician who published De Motu Cordis in 1628, showing that blood circulates around the body.

(Total for Question 5 is 1 mark)

6 Give the English title of Harvey's 1628 publication on the circulation of the blood.

(Total for Question 6 is 1 mark)

7 State what Galen incorrectly believed about how the body produced and used blood, which Harvey's work challenged.

(Total for Question 7 is 2 marks)

8 Give one piece of evidence or reasoning William Harvey used to argue that blood circulates around the body rather than being constantly produced and used up.

(Total for Question 8 is 2 marks)

9 Give one idea about the cause of disease that stayed the same (showed continuity) between the medieval period and the Medical Renaissance.

(Total for Question 9 is 1 mark)

10 Name the institution founded in London in 1660, and granted a royal charter in 1662, that promoted scientific experimentation and the sharing of results among scientists and doctors.

(Total for Question 10 is 1 mark)

11 State one way in which the Royal Society helped new scientific and medical ideas to spread more quickly.

(Total for Question 11 is 2 marks)

- 12** Give one reason why Galen's ideas about anatomy went largely unchallenged in England for so many centuries before the Renaissance.

(Total for Question 12 is 2 marks)

- 13** Explain two ways in which ideas about the cause of disease in the years c1500-1700 showed continuity with ideas from the medieval period (c1250-1500).

(Total for Question 13 is 4 marks)

- 14** Describe two ways in which Andreas Vesalius's methods differed from those of earlier anatomists who relied on Galen's texts.

(Total for Question 14 is 4 marks)

- 15** Explain why ideas about the causes of disease changed only slowly in England during the years c1500-1700, despite the anatomical discoveries of individuals such as Vesalius and Harvey.

(Total for Question 15 is 8 marks)

- 16** Explain why the work of William Harvey was historically important, even though it did not immediately change how most patients were treated in his lifetime.

(Total for Question 16 is 8 marks)

- 17** 'The most significant reason ideas about the human body changed in the years c1500-1700 was the work of individuals such as Vesalius and Harvey.' How far do you agree with this statement? Explain your answer.

(Total for Question 17 is 16 marks)

Mark scheme · EDX.MED1 Medicine in Britain, c1500-c1700: The Medical Renaissance and Ideas About the Cause of Disease

Question 1

- **B1** Andreas Vesalius
- **Answer: Andreas Vesalius**

Question 2

- **B1** De Humani Corporis Fabrica (accept 'On the Fabric of the Human Body')
- **Answer: De Humani Corporis Fabrica**

Question 3

- **B1** identifies a specific anatomical error, e.g. the shape of the human jawbone
- **B1** correct detail: Galen, working from animal dissection, wrongly described the jawbone as being made of two bones, whereas Vesalius showed it is a single bone
- **Answer: Galen wrongly believed the human jawbone was in two parts (based on animal dissection); Vesalius's human dissections showed it is a single bone.**

Question 4

- **B1** the printing press
- **Answer: The printing press**

Question 5

- **B1** William Harvey
- **Answer: William Harvey**

Question 6

- **B1** On the Motion of the Heart (and Blood) (accept close equivalents; also accept the Latin title De Motu Cordis)
- **Answer: On the Motion of the Heart and Blood**

Question 7

- **B1** Galen believed blood was made continuously in the liver from digested food
- **B1** and was then used up ('burned as fuel') by the body's organs, rather than circulating and being reused
- **Answer: Galen believed blood was made in the liver from food and burned up by the body as fuel, rather than circulating around the body.**

Question 8

- **B1** he calculated the amount of blood the heart pumps in an hour and showed the body could not possibly produce that much blood from food, so it had to be reused
- **B1** or, he observed that valves in the veins only allow blood to flow in one direction, towards the heart
- **Answer: E.g. Harvey calculated the heart pumps far more blood per hour than the body could produce from food, so it had to be reused (recirculated); or he observed one-way valves in the veins.**

Question 9

- **B1** the Theory of the Four Humours continued to be taught at universities (or, religious explanations for disease continued); accept any valid continuity
- **Answer: The Theory of the Four Humours continued to be taught at universities.**

Question 10

- **B1** the Royal Society
- **Answer: The Royal Society**

Question 11

- **B1** it published a journal, Philosophical Transactions, from 1665
- **B1** which let experiments and discoveries be shared, read and checked by scientists and doctors elsewhere in the country and abroad
- **Answer: It published Philosophical Transactions (from 1665), letting scientists share and check each other's findings.**

Question 12

- **B1** the Church, which ran the universities and approved the medical curriculum, supported Galen's ideas as compatible with Christian teaching
- **B1** and human dissection was rare and tightly restricted for a long period, limiting opportunities to test his theories directly against a real human body
- **Answer: The Church-controlled universities approved his ideas, and human dissection was rare and restricted, limiting opportunities to challenge him.**

Question 13

- **B2** the Theory of the Four Humours remained the dominant explanation taught at universities, with illness still explained as an imbalance of blood, phlegm, black bile and yellow bile
- **B2** religious explanations for disease also continued, with many people still believing God could send illness as a punishment, alongside natural explanations
- **Answer: Continuity in the Four Humours theory taught at universities, and continuity of religious explanations for disease.**

Question 14

- **B2** Vesalius carried out his own dissections of human bodies, rather than relying only on Galen's descriptions, which had been based mainly on animal dissection
- **B2** he recorded and published his detailed observations, with accurate illustrations, in his own book (De Humani Corporis Fabrica, 1543), allowing his findings to be checked and shared rather than simply accepted on authority
- **Answer: He dissected human bodies himself rather than relying on Galen's animal-based texts, and published his own detailed, illustrated findings for others to check.**

Question 15

- **Level 1** (1-2): Identifies one or two general reasons why change was slow, with little or no supporting detail or explanation.
- **Level 2** (3-4): Identifies and begins to explain one reason, supported by accurate detail.
- **Level 3** (5-6): Explains two reasons why change was slow, each supported by accurate and relevant detail.
- **Level 4** (7-8): Explains two or more reasons in a well-developed, logically structured way, supported throughout by precise and accurate detail, showing how the reasons connect.
- **Indicative content:**
 - Universities continued to teach Galen's texts as the basis of medical training for a long time, so most trained physicians' underlying theoretical framework (the Four Humours) was not directly overturned by anatomical corrections alone.
 - Vesalius's and Harvey's discoveries corrected specific details of anatomy and physiology but did not themselves provide a complete new theory of what caused disease to replace the Four Humours; Germ Theory, which explained disease in a genuinely new way, was not discovered until the nineteenth century.
 - Religious belief remained powerful and widespread, so many people continued to see illness partly as a matter of providence or punishment for sin, regardless of new anatomical findings.
 - New ideas spread only gradually even with the printing press, because most practitioners could not read Latin scientific texts easily and continued to rely on traditional advice from family, wise women or apothecaries.
 - Individuals such as Harvey faced scepticism and resistance from some contemporaries who continued to defend Galen's authority, showing new evidence did not translate immediately into changed belief or practice.

Question 16

- **Level 1** (1-2): Identifies one or two general reasons for Harvey's importance, with little or no supporting detail or explanation.
- **Level 2** (3-4): Identifies and begins to explain one reason, supported by accurate detail.
- **Level 3** (5-6): Explains two reasons for Harvey's importance, each supported by accurate and relevant detail.
- **Level 4** (7-8): Explains two or more reasons in a well-developed, logically structured way, supported throughout by precise and accurate detail, showing how the reasons connect.
- **Indicative content:**
 - Harvey proved, using careful experiment and mathematical calculation, that blood circulates continuously around the body in one direction, pumped by the heart, disproving Galen's centuries-old idea that blood was made in the liver and burned up as fuel.
 - His approach, using rigorous observation, experiment and calculation rather than relying on ancient written authority, was an early example of what became the modern scientific method, later formalised by institutions such as the Royal Society (founded 1660).
 - Harvey did not know about capillaries (only observed decades later, in 1661, once the microscope was more developed) and his discovery did not by itself suggest a new way to treat illness, so practices such as bloodletting continued largely unchanged in the short term.
 - In the long run, his accurate understanding of circulation became foundational to much later medical developments that depended on knowing how the body's blood system works, showing that not all significant medical discoveries produce an immediate change in treatment.

Question 17

- **Level 1** (1-4): Shows limited relevant knowledge of ideas about the body in this period, and offers only a simple, unsupported opinion on the statement.
- **Level 2** (5-8): Shows some relevant knowledge and identifies relevant factors, but the argument is only partly supported and lacks a developed judgement on how far the statement is accurate.
- **Level 3** (9-12): Shows good relevant knowledge and explains a range of factors, reaching a supported judgement on how far the statement is accurate, with some links made between factors.
- **Level 4** (13-16): Shows precise, well-selected knowledge and explains a range of factors in a balanced way, reaching a fully supported and sustained judgement on how far the statement is accurate, with clear analytical links between factors and consistently accurate use of specialist historical terminology.
- **Indicative content:**
 - Supporting the statement: Vesalius's direct human dissections, recorded in *De Humani Corporis Fabrica* (1543), corrected specific, longstanding errors in Galen's anatomy, showing the value of first-hand observation over ancient authority.
 - Supporting the statement: Harvey's *De Motu Cordis* (1628) used experiment and calculation to prove the circulation of the blood, disproving a core part of Galenic theory and demonstrating a new approach to medical enquiry.
 - Against the statement: the invention of the printing press, in use in England from the late fifteenth century, was what allowed Vesalius's detailed illustrations to be copied accurately and spread across Europe; without it, one individual's findings might have remained locally known.
 - Against the statement: the founding of the Royal Society in 1660 created an institution that encouraged and organised the sharing and testing of scientific ideas, showing that organisations, not only individuals, helped establish a new scientific approach to medicine.
 - Against the statement: government and religious institutions still limited or shaped what could be studied and believed, such as restrictions on dissection and the continuing authority of Church-run universities, so the pace of change also depended on wider social and institutional factors, not only individual brilliance.
 - A balanced answer might argue that individuals provided the crucial breakthroughs, but that technology (the printing press) and institutions (the Royal Society) were what allowed those breakthroughs to spread and build into lasting change, rather than remaining isolated achievements.