1.7 Medicine in Britain, c1250-present: Change and Continuity in Ideas About the Cause of Disease: 30-minute Pack

EDEXCEL 1HI0 · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. You are advised to spend about 30 minutes on this pack.

1 Name the scientific concept, fully understood only after the 1953 discovery of DNA's structure, that explains how some diseases and characteristics are inherited from parents to children.

(Total for Question 1 is 1 mark)

2 Explain why some inaccurate ideas about the cause of disease, such as the Theory of the Four Humours, lasted for such a long period of British history.

(Total for Question 2 is 8 marks)

© Revision Library | revisionlibrary.co.uk

3 'Science and technology have been the most important factor in changing ideas about the cause of disease in Britain in the years c1250-present.' How far do you agree with this statement? Explain your answer.

(Total for Question 3 is 16 marks)

4 Put these four individuals in chronological order according to when they made their main contribution to ideas about the cause of disease: Robert Koch, Galen, Andreas Vesalius, James Watson and Francis Crick.

(Total for Question 4 is 2 marks)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 1.7 Medicine in Britain, c1250-present: Change and Continuity in Ideas About the Cause of Disease: 30-minute Pack

Question 1

genes/genetics (accept 'genetic inheritance') **B1**

Answer: Genetics (genetic inheritance)

Question 2

Level 1 Identifies one or two general reasons for the theory's long survival, with little or no supporting detail or explanation. **1-2**

Level 2 Identifies and begins to explain one reason, supported by accurate detail. **3-4**

Level 3 Explains two reasons for the theory's long survival, each supported by accurate and relevant detail. **5-6**

Level 4 Explains two or more reasons in a well-developed, logically structured way, supported throughout by precise and accurate detail, showing how the reasons connect. **7-8**

Indicative content:

- The Four Humours theory, developed by ancient Greek and Roman writers such as Hippocrates and Galen, appeared to fit many everyday observations, such as fevers or the apparent effects of bloodletting, so it was not obviously wrong to contemporaries without a scientific alternative.
- For much of the medieval and early modern period, the Church controlled university education and approved which ideas could be taught, protecting the theory's status because it did not directly contradict religious teaching.
- No effective way existed to observe the real cause of infectious disease until the microscope was sufficiently developed and used systematically by scientists such as Pasteur and Koch in the nineteenth century, so no genuine alternative explanation was available for centuries.
- Because doctors were trained in the theory at university and their professional authority depended on it, there was limited institutional incentive to question it, even as some individuals, such as Vesalius and Harvey, began to correct specific related errors in anatomy and physiology.

Question 3

Level 1 Shows limited relevant knowledge of ideas about the cause of disease across the period, and offers only a simple, unsupported opinion on the statement. **1-4**

Level 2 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. **5-8**

Level 3 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. **9-12**

Level 4 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. **13-16**

Indicative content:

- Supporting the statement: the invention and improvement of the microscope was essential to Pasteur's and Koch's nineteenth-century proof that specific germs cause specific diseases, something no earlier period could have discovered without the technology to see microorganisms.
- Supporting the statement: the discovery of the structure of DNA in 1953, made possible by X-ray diffraction technology used by Rosalind Franklin and Maurice Wilkins, opened up a scientific, genetic understanding of disease that had no equivalent in earlier centuries.
- Against the statement: individuals mattered greatly regardless of the technology available to them, for example Vesalius's willingness to challenge Galen through his own human dissections in an age without modern scientific instruments.
- Against the statement: religion and the Church shaped which ideas could be taught and believed for centuries, showing that social and institutional power, not only scientific capability, controlled which explanations of disease were accepted at a given time.
- Against the statement: communication and the spread of ideas, such as the printing press from the sixteenth century, scientific institutions like the Royal Society from 1660, and later widespread literacy and publishing, were what allowed a scientific discovery to become widely accepted knowledge rather than remaining an isolated finding.
- A balanced judgement might argue that new technology made genuinely new discoveries possible, especially the microscope and X-ray diffraction, but that other factors, particularly the power of the Church in the earlier periods and the spread of communication in the later periods, determined how quickly and widely those discoveries actually changed accepted ideas.

© Revision Library | revisionlibrary.co.uk

Question 4

Galen placed first and Vesalius placed second **B1**

Koch placed third and Watson and Crick placed fourth **B1**

Answer: Galen, then Vesalius, then Koch, then Watson and Crick.

© Revision Library | revisionlibrary.co.uk