1.14 Anaesthetics and Antiseptics: Simpson, Lister and Safer Surgery: 10-minute Pack

EDEXCEL 1HI0 · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. You are advised to spend about 10 minutes on this pack.

1 Give one piece of equipment, other than a soaked dressing, that Lister used to reduce germs reaching a wound during an operation.

(Total for Question 1 is 1 mark)

2 Name the earlier scientist whose work on microbes Lister used to justify antiseptic surgery.

(Total for Question 2 is 1 mark)

3 State one reason why some doctors at first resisted Lister's antiseptic methods.

(Total for Question 3 is 2 marks)

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4 State one way the introduction of anaesthetics changed surgery in the nineteenth century.

(Total for Question 4 is 2 marks)

5 Explain one way in which the development of anaesthetics in the mid nineteenth century was similar to the development of antiseptic surgery later in the century.

(Total for Question 5 is 4 marks)

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Mark scheme · 1.14 Anaesthetics and Antiseptics: Simpson, Lister and Safer Surgery: 10-minute Pack

Question 1

a carbolic acid spray, a device that produced a fine mist of carbolic acid over the wound and instruments, oe **B1**

Answer: A carbolic acid spray, which produced a fine mist of carbolic acid over the wound and instruments during an operation.

Question 2

Louis Pasteur **B1**

Answer: Louis Pasteur

Question 3

some surgeons were sceptical of the new germ ideas and thought infection was due to bad air or patient weakness **B1**

supporting detail, e.g. using carbolic was seen as messy and time-consuming and some feared it would damage living tissue **B1**

Answer: Doctors resisted because they rejected germ-based explanations of infection and because carbolic procedures were seen as messy, time-consuming and possibly harmful to tissue.

Question 4

allowed surgeons to perform longer and more complex operations without the patient feeling pain **B1**

supporting detail, e.g. operations that had been impossible because of patient pain became practicable **B1**

Answer: Anaesthetics allowed longer, more complex operations without pain, so surgeons could attempt procedures previously impossible because patients could not bear them.

Question 5

identifies one clear similarity, for example that both depended on scientific discoveries which changed practice, and explains it with supporting detail **B2**

supporting detail showing the similarity, e.g. both used a new scientific idea to transform surgery: chloroform applied chemistry/physiology to relieve pain, and Lister applied Pasteur's microbial ideas to prevent infection **B2**

Answer: Both developments transformed surgery by applying a new scientific idea to solve a specific problem: chloroform anaesthesia applied chemistry and physiology to remove the pain of operations, while Lister's carbolic antisepsis applied Pasteur's germ theory to prevent wound infection, so each used scientific discovery to make operations safer and more widely acceptable.

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