1.5 Medicine in Britain, c1900-present: War, Science and the Development of Penicillin: Test Pack

EDEXCEL 1HI0 · about 15 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. You are advised to spend about 15 minutes on this pack.

1 Name the Scottish scientist who accidentally discovered penicillin's antibacterial properties in 1928 while working at St Mary's Hospital, London.

(Total for Question 1 is 1 mark)

2 Explain two ways in which the First World War (1914-18) led to advances in medical treatment in Britain.

(Total for Question 2 is 4 marks)

3 Describe two ways in which the discovery and development of penicillin changed medical treatment.

(Total for Question 3 is 4 marks)

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4 Give one reason why penicillin was mass-produced mainly by American pharmaceutical companies rather than in Britain during the Second World War.

(Total for Question 4 is 2 marks)

5 State the chemical Robertson used to prevent stored blood from clotting so it could be kept and transported for transfusion.

(Total for Question 5 is 1 mark)

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Mark scheme · 1.5 Medicine in Britain, c1900-present: War, Science and the Development of Penicillin: Test Pack

Question 1

Alexander Fleming **B1**

Answer: Alexander Fleming

Question 2

blood transfusion became more practical for treating injured soldiers because Oswald Robertson's use of sodium citrate (from 1917) allowed blood to be stored rather than needing a live donor on hand, enabling early blood banks near the front line **B2**

plastic surgery techniques developed rapidly to treat severe facial injuries from trench warfare, pioneered by Harold Gillies at his specialist unit at Queen's Hospital, Sidcup, including new skin-graft methods such as the tubed pedicle graft **B2**

Answer: Blood storage using sodium citrate enabled earlier transfusion near the front line, and Gillies's plastic surgery unit at Sidcup developed new skin-graft techniques for facial injuries.

Question 3

Fleming's accidental discovery in 1928 that the mould Penicillium killed bacteria opened up the idea of using it as a treatment for bacterial infection **B2**

Florey and Chain's work in the early 1940s to purify and mass-produce penicillin turned it into a usable, widely available drug, which then saved many lives from bacterial infection, especially during and after the Second World War **B2**

Answer: Fleming's 1928 discovery identified penicillin's antibacterial effect, and Florey and Chain's early-1940s work turned it into a mass-produced, life-saving drug.

Question 4

Britain's wartime industry and resources were already heavily stretched by the war effort and at risk from bombing **B1**

so American pharmaceutical companies, with more spare manufacturing capacity, took on large-scale production, especially to supply Allied forces for the 1944 D-Day landings **B1**

Answer: Britain's industry was stretched by the war effort, so American companies, with more spare capacity, took on mass production for Allied forces.

Question 5

sodium citrate **B1**

Answer: Sodium citrate

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