2.5 Lean Production: Just-in-Time, Kaizen and Time-Based Management: Test Pack

AQA 7132 · Calculators not allowed · about 20 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions in the spaces provided. Show working for calculations. GreenTech Bikes, used throughout this pack, is a fictional UK business.

1 Terms: 1 Just-in-time (JIT); 2 Kaizen; 3 Kanban; 4 Time-based management. Definitions: A A visual signalling system used on the shop floor to trigger the movement or production of parts. B Continuous small improvements by employees across the business. C Reducing the time from product design to customer delivery. D Ordering or producing inventory so it arrives only when it is needed for production.

(Total for Question 1 is 1 mark)

2 Identify one way GreenTech Bikes could reduce the risk of supply chain disruption while still operating JIT.

(Total for Question 2 is 1 mark)

3 State two operational benefits GreenTech Bikes could gain from time-based management, such as reducing time to market or using mass customisation.

(Total for Question 3 is 2 marks)

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4 Explain one way time-based management supports mass customisation at GreenTech Bikes. Give a developed answer.

(Total for Question 4 is 3 marks)

5 Explain one benefit of kaizen for GreenTech Bikes. Give a developed answer that refers to the business context.

(Total for Question 5 is 6 marks)

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Mark scheme · 2.5 Lean Production: Just-in-Time, Kaizen and Time-Based Management: Test Pack

Question 1

All four matches correct: 1 D, 2 B, 3 A, 4 C cao **B1**

Answer: 1 D; 2 B; 3 A; 4 C

Question 2

use multiple suppliers or hold a small safety stock with critical parts **B1**

Answer: Use multiple suppliers for key parts or hold a small safety stock for critical components.

Question 3

faster time to market, enabling earlier sales or first-mover advantage **B1**

ability to offer mass customisation, allowing higher prices or better customer fit **B1**

Answer: Faster time to market; ability to offer mass customisation enabling higher prices or better customer fit.

Question 4

identifies a way, for example using modular design or parallel processing to shorten lead times **B1**

develops the point, for example modular components let the firm assemble customised bikes quickly **B1**

links to an outcome, for example faster delivery of customised orders and potential to charge a premium **B1**

Answer: Using modular design and parallel processing allows GreenTech Bikes to assemble customised configurations quickly, so customised orders are delivered faster and the firm can potentially charge a premium.

Question 5

identifies a benefit, for example continuous small improvements can improve process efficiency **B1**

applies this to GreenTech Bikes, for example employees on the assembly line suggest ways to reduce bolt-fitting time **B1**

develops the application, for example faster bolt fitting reduces cycle time per bike **B1**

links to operational outcome, for example increased throughput or ability to meet demand faster **B1**

explains a secondary benefit, for example lower unit labour cost or higher staff engagement **B1**

gives a short evaluative comment, for example these improvements cumulatively can make the business more competitive **B1**

Answer: Continuous small improvements by staff can make assembly tasks quicker, for example a suggestion to change the order of components could reduce bolt-fitting time, lowering cycle time per bike. This raises throughput, helps meet demand faster and lowers unit labour cost, while engaging staff. Over time these cumulative gains make GreenTech Bikes more competitive.

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