

Case study 12: Mark scheme

Chapter 30: Production methods

Peter Richards Sausages Ltd

Peter Richards started making specialist sausages when he opened a butcher's shop in Eil, Scotland. He made the sausages himself, using basic, hand-operated equipment. Over the years he built up a strong local reputation for excellence and eventually he was able to stop all his other activities in order to concentrate on sausage production.

For his seven traditional recipes, he used batch production methods. Business boomed after his sausages started to win prizes at sausage shows. He was eventually able to recruit four skilled workers to be in charge of the four different parts of the process: meat processing, mixing of ingredients, sausage stuffing and packing. When he was asked by a major countrywide supermarket chain to produce a gourmet sausage range, he realised that he was going to have to expand production capabilities.

He considered relocating and investing in a new factory site and some major capital equipment. This would enable him to use mass production methods adapted for continued batch production processes and higher productivity. He realised that he would have to plan this carefully if he was going to compete with the highly automated factories of other major sausage manufacturers. He was not sure whether to simply expand his existing operation in order to retain his handmade brand image. His current workers had exceptional team spirit and he did not want to lose this motivational force in his move to expand.

SL questions: 20 marks, 35 minutes

- 1 Describe what is meant by 'batch production'. (2)

This is a production method in which production is carried out in stages. All products in a batch go through each individual stage before the next stage is started. Batch production is often used where there is only one set of equipment that is used for making several different products. It is very frequently used for making foodstuffs. It allows for economies of scale and division of labour at each stage. It has the disadvantage that it might lead to a lot of part-finished stock waiting around for batch processing to finish.

Apply **Resources table 3a** mark band descriptors.

- 2 Explain in detail **two** advantages of having a highly automated factory. (5)

- economies of scale
- division of labour
- fewer staff needed
- higher productivity
- more consistent products
- any other relevant point

SL: apply **Resources table 1** mark band descriptors.

- 3 Suggest and discuss in detail **three** factors that Peter would need to consider before changing his production process. (6)
- available finance
 - human resources available and training needed
 - marketing
 - any other relevant point

SL: apply **Resources table 1** mark band descriptors.

Award a maximum of 4 marks if only two factors are discussed and a maximum of 2 marks if only one factor is discussed.

- 4 Evaluate whether Peter should simply expand his existing operations and retain the handmade image of his sausages. (7)

For:

- tried and tested method with successful products
- no redundancies needed
- no expensive relocation needed
- faster to do – buying and building a new factory would take a long time
- any other relevant factor

Against:

- future maximum production levels may be more limited
- it may be difficult/time consuming/costly to find and train workers for the skilled specialist processes
- a highly automated factory could be cheaper to run/more productive/more consistent in terms of quality
- any other relevant factor

SL: apply **Resources table 1** mark band descriptors.

A justified conclusion is required.

HL questions: 25 marks, 45 minutes

- 1 **a** Describe what is meant by ‘batch production’. (2)
- This is a production method in which production is carried out in stages. All products in a batch go through each individual stage before the next stage is started. Batch production is often used where there is only one set of equipment that is used for making several different products. It is very frequently used for making foodstuffs. It allows for economies of scale and division of labour at each stage. It has the disadvantage that it might lead to a lot of part-finished stock waiting around for batch processing to finish.
- b** Define the term ‘productivity’. (2)
- This refers to the number of items that are made during a single unit of time. This may be analysed in relation to the cost of capital investment in order to find out if the cost of changing the production process is likely to result in more efficient or greater productivity.

Award 2 marks for a detailed definition and 1 mark for a basic definition.

- 2 Discuss **two** factors that may influence choice of production line. (6)
- These may include:
- size of the market
 - capital available
 - availability of skilled workforce
 - market demand for individualised products
 - any other relevant factor.

Apply **Resources table 2** mark band descriptors.

- 3 Examine **two** advantages of using cell production if a new mass production factory were to be opened. (6)
- increased motivation
 - work is more varied/interesting
 - staff turnover lower
 - allows new staff to be trained by more experienced members of the team
 - any other relevant factor

Apply **Resources table 2** mark band descriptors.

- 4** Evaluate whether Peter should increase production by traditional methods or change to mass production. **(9)**

Define mass production: production of goods in a continuous flow, often on a production line. In this case, sausages could still be produced in batches as the equipment could be used to mass produce separate sausage recipes.

Traditional production

For	Against
Efficient use of resources	Maximum production may be limited
Team spirit and motivation	Quality may vary due to the possibility of human error
Tried and tested methods	Cost may be higher than mass production
Could be marketed with a handmade brand image, allowing premium pricing	Bigger workforce needed

Mass production

For	Against
Economies of scale	Worker boredom, which leads to high staff turnover and absenteeism
Division of labour	
Need fewer staff	
Higher productivity	
More consistent products	

Apply **Resources table 2** mark band descriptors.

A justified conclusion is required.