

Design & Technology

Methods of production

Materials required for questions

- Pencil
- Rubber
- Calculator

Instructions

- Use black ink or ball-point pen
- Try answer all questions
- Use the space provided to answer questions
- Calculators can be used if necessary
- Don't spend too much time on one question

Advice

- Marks for each question are in brackets
- Read each question fully
- Try to answer every question
- Don't spend too much time on one question

Good luck!

Q1. Why might someone choose to use one-off manufacturing to make a product?

- A** Product made to fit user
- B** Quicker to produce
- C** Less labour intensive

Q2. What is one-off manufacturing used to make?

- A** Books
- B** Sports cars
- C** Bespoke furniture

Q3. Which scale of production method can adjust to market trends?

- A** Batch
- B** Mass
- C** Continuous

Q4. Which scale of production usually has the lowest unit cost?

- A** Batch
- B** Continuous
- C** Mass

Q5. What is continuous production used to manufacture?

- A** Plastic bottles
- B** Cars
- C** Newspapers

Q6. What 2 scales of production have a high initial set-up cost?

- A** Batch, Continuous
- B** One-off, Mass
- C** Mass, Continuous

Q7. What is an advantage of using mass production?

- A** Can respond to market change
- B** Less labour costs
- C** Can be made to personal specifications

Q8. Which scale of production is used to print newspapers?

- A** Batch
- B** Mass
- C** Continuous

Q9. Outline the negative effects mass-production has had on employment. **(4 marks)**

Q10. Explain why the production of glass reinforced plastic (GRP) products is suited to batch production. **(4 marks)**

Q11. Discuss the advantages and disadvantages of buying a one-off chair for the home. **(6 marks)**

Answers

Q1. A

Q2. C

Q3. A

Q4. B

Q5. A

Q6. C

Q7. B

Q8. A

Q9.

- Workers replaced by machines (1)
- Low job satisfaction/ morale/ self-pride in the work (1)
- Low wages (1)
- Poor quality living conditions/poverty (1)
- Sweatshop employment/ long hours/ few breaks (women/children) (1)
- Poor/unsafe/bad working conditions (1)
- Uprisings/strikes/friction/resentment (1)
- Unemployment/less employment/less demand for labour (1)

Q10.

- Mould is re-usable (1) so multiple mouldings can be produced saving time / money (1)
- Flexible production rates can be matched to customer demand/made to order (1) so no stock holding / storage issues (1)
- A range of options can be easily catered for (1) tailoring the product to client needs (e.g. colour/size) (1)
- Process is labour intensive / slow / difficult to automate, (1) making the development of mass production systems too expensive for market demand. (1)

Q11.

Advantages

- Bespoke chair will be designed and manufactured to a particular size which may have been measured at the client's home. This means that the furniture when produced would be a perfect fit for the client.
- Bespoke items allow the client to communicate their wishes to the manufacturer, allowing for the selection of colours to match the existing style or selection of materials to match existing furniture.

- The purchase of bespoke furniture allows the customer to select a particular designer or manufacturer based on their reputation or existing portfolio if work.
- Bespoke furniture can be designed to fulfil all of the aesthetics and functional needs of the client.

Disadvantages

- Bespoke furniture will be more expensive than a mass produced equivalent product due to the cost of the craftsman, the lack of cost-saving mass production techniques and the less efficient use of material associated with having to create custom sections or forms.
- The manufacture of one-off furniture is a lot more time consuming than selecting a mass produced equivalent product, This means that the clients order would be subject to an extended lead time.
- Bespoke furniture is less likely to make use of knock down fittings or bought in components.
- If the chair is damaged or a component needs replacing, it is unlikely that the customer will have access to the necessary spares.

Q12.

- Batch production utilises flexibility of equipment allowing the production facility to adapt to manufacture different products therefore small manufacturers can produce a range of products
- Batch production is cost effective when relatively small quantities are required as exact quantities of materials can be ordered for the batch allowing the manufacturer to maximise profits
- Small scale batch production reduces the need to store surplus materials because batches can be sized to match current orders/demand before products are sold direct to the customer
- More time efficient as jigs can be used during the manufacturing process which reduces the need to mark out individual parts

3 marks per bullet point