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Design & Technology
AQA A-Level

Sub-assembly

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
- For the multiple choice questions, circle your answer

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. What is a key purpose of sub-assembly in manufacturing?

A To delay the final production process

B To build components separately before final assembly

C To reduce the need for specialised workers

Q2. Which product is most likely to use sub-assembly lines?

A Handmade pottery

B A custom-designed wedding dress

C A car engine

Q3. How does sub-assembly improve efficiency?

A By completing all parts simultaneously on one production line

B By manufacturing components in parallel, reducing final assembly time

C By eliminating quality checks for individual parts

Q4. Which term describes pre-made components used in sub-assembly?

A Bespoke parts

B Standardised modules

C Raw materials

Q5. Explain how the use of sub-assembly lines benefits the manufacturing process **(4 marks)**

Answers

Q1. B
Q2. C
Q3. B
Q4. B

Q5.

- Sub-assembly involves manufacturing components separately (e.g., car engines, smartphone screens) before integrating them into the final product.
- Enables parallel production of parts, reducing overall lead time (e.g., engines and interiors built simultaneously).
- Defects are identified and resolved earlier in sub-assembly stages, minimising waste in the final assembly.
- Teams or suppliers focus on specific sub-assemblies, improving precision and reducing errors.
- Bulk production of standardised sub-assemblies lowers per-unit costs (economies of scale).
- Sub-assemblies can be stockpiled or adjusted independently, allowing quicker responses to design changes.
- Reduces complexity in the main production line by using pre-tested, ready-to-install components.