OCR Cambridge Nationals Engineering Design R038 Revision Pack? Topic Area 1: Designing Processes

Summary Sheet

TA1: Designing Processes covers the following key concepts:

- Design Strategies:
 - * Linear Step-by-step approach from brief to final product.
 - * Iterative Cyclical process involving repeated testing and refinement.
 - * User-Centred Focused on meeting user needs through feedback and involvement.
- Market Research Techniques:
 - * Surveys, interviews, focus groups, competitor analysis.
- Product Analysis using ACCESS FM:
 - * Aesthetics, Cost, Customer, Environment, Safety, Size, Function, Materials.
- Generating Design Ideas:
 - * Brainstorming, mood boards, sketches, mind maps.
- Modelling and Testing Designs:
- * Physical models (card, foam, 3D prints).
- * Virtual models (CAD software).
- * Testing for functionality, durability, user feedback.

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Flashcards

Q: What is a linear design strategy?

A: A step-by-step approach from brief to final product.

Q: What does ACCESS FM stand for?

A: Aesthetics, Cost, Customer, Environment, Safety, Size, Function, Materials.

Q: What is iterative design?

A: A cyclical process involving repeated testing and refinement.

Q: Name two market research techniques.

A: Surveys and focus groups.

Q: What is user-centred design?

A: Design focused on meeting user needs through feedback and involvement.

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Practice Questions

- 1. Explain the difference between linear and iterative design strategies.
- 2. Describe how ACCESS FM can be used to analyse a product.
- 3. List three methods of generating design ideas and explain their benefits.
- 4. What are the advantages of using virtual models over physical models?
- 5. How can market research influence the design process?

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Visual Aids

- Diagram: Design Process Flowchart
 - * Start -> Research -> Idea Generation -> Modelling -> Testing -> Evaluation -> Final Design
- ACCESS FM Table:
 - * Aesthetics How the product looks
 - * Cost Budget and pricing
 - * Customer Target audience
 - * Environment Sustainability
 - * Safety Risk and protection
 - * Size Dimensions and scale
 - * Function Purpose and use
 - * Materials Resources used