

Design & Technology Mock Exam - Revision Topics

Materials:

Papers and boards
Natural and manufactured boards
Thermoset and Thermoplastic polymers
Ferrous, non-ferrous metals and alloys
Fibres and fabrics

Electronic and programmable components:

Graphical conventions for communicating concepts: circuit diagrams, block diagrams and flowcharts.
Symbols and components
The 'systems' approach – input; process; output.
Control component, semiconductors such as transistors IC and programmable microcontrollers
Ohms law $V=I \times R$
Resistor colour codes

Mechanical systems:

Types of motion
Levers
Cam and follower
Crank and slider
Rack and pinion
Spur gears
Bevel gears
Worm gears
Pulley and belt
Lifting pulleys
Mechanical Advantage
Velocity Ratio
Rotational Velocity

Smart and new materials:

Thermochromic materials
Photochromic materials
Shape memory alloy
Quantum Tunnelling Composite
Kevlar
Nomex
Rhovyl
Polymorph

New and emerging technologies:

Product life cycle
Technology Push / Market Pull
Planned obsolescence
6Rs and the impact of manufacturing on the environment
Carbon footprint
Sustainability