**Design & Technology**

**AQA A-Level** Logo

Description automatically generated with low confidence

**Paper and board forming processes**

**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 the primary purpose of die cutting in paper packaging?

**A** Adding decorative colours

**B** Cutting precise shapes using a metal die

**C** Increasing material thickness

**Q2.** Which process uses a high-powered beam to create intricate designs in paper?

**A** Creasing

**B** Bending

**C** Laser cutting

**Q3.** Why is creasing applied to paper or board before folding?

**A** To weaken the fibres for easier bending

**B** To add waterproof coatings

**C** To enhance print quality

**Q4.** What is a key advantage of laser cutting over traditional die cutting?

**A** Lower initial setup costs for small batches

**B** Faster production of large quantities

**C** No need for skilled operators

**Q5.** Describe the process of die cutting **(6 marks)**

**Answers**

**Q1**. B

**Q2**. C

**Q3**. A

**Q4**. A

**Q5**.

Die production

* A thin steel cutter blade is folded and shaped into the desired profile or shape.
* Creasing rules and perforations can be incorporated into the die depending on the required output.
* These blades are mounted into a substrate board/cylinder which maintains the shape and alignment of the die.

Mounting die in machine

* The die is mounted into a pressing machine that may be manual or hydraulic.
* The die can either be flat or cylindrical.

Feed card into machine

* Card blanks are fed into the press either in batches or continuously.

Card secured in place

* The substrate to be cut is located in the machine, often using locator guides to ensure the correct alignment.

Pressure applied to card

* The die is forced through the material and the waste material and die cut pattern is removed.

Pressure removed and card ejected

* A soft rubber support surrounds the die. This is compressed when the die is used and ejects the cut material when the force is removed.