**Design & Technology**

**AQA GCSE** Logo

Description automatically generated with low confidence

**Environmental, social and economic challenge**

**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 main environmental impact of deforestation?

**A** Reduced urban development

**B** 15% of global CO₂ emissions

**C** Increased use of plastic

**Q2.** How does deforestation affect design and manufacturing?

**A** Makes 3D printing obsolete

**B** Decreases availability of cheap, uncertified timber

**C** Forces use of FSC-certified wood, raising costs

**Q3.** How could global warming impact product design?

**A** Less need for heating systems in cold climates

**B** More demand for energy-efficient products

**C** Reduced use of biodegradable materials

**Q4.** What is the main goal of Fair Trade?

**A** Ethical wages and safe working conditions

**B** Faster production speeds

**C** Cheaper raw materials

**Q5.** Explain how each of the following issues may be considered before designing and manufacturing new products **(4 marks)**

Fair trade

Global warming

**Answers**

**Q1**. B

**Q2**. C

**Q3**. B

**Q4**. A

**Q5**.

Fair trade

* Are people getting a fair price.
* Companies may want to improve their credentials as a fair-trade organisation when selling their new products.
* Promotes the company with more ethical credentials.
* Designers and manufacturers will want to know farmers can support their families.
* Workers’ rights.
* Safe working conditions.
* Are farmers in the developing world getting a fair price for their produce?
* Designers and manufacturers will recognise that good PR can help sales if working conditions are good for farmers (and their families).
* Manufacturers now know that some customers actively buy based on whether a product is fair trade or not e.g., coffee or chocolate.
* Moral purpose to ensure farmers and their families are not being exploited.

Global warming

* Don’t want to heat up the planet.
* Don’t want products that damage the planet.
* Don’t want to add to conditions that create extreme weather/drought.
* Designers/manufacturers may want to cut CO2 emissions as they know it leads to global warming.
* Designers and manufacturers may employ strategies and techniques which don’t contribute to global warming e.g. use fossil fuels to power factories.
* Designers/manufacturers may want to cut CO2 emissions as they know it leads to global warming. They won’t want to be responsible for damaging the planet more.
* Manufacturers may choose to promote a product as ‘climate friendly’ because it has lower CO2 emissions and won’t contribute to global warming e.g., car manufacturers, TV manufacturers.
* Designers and manufacturers may calculate the carbon footprint of their business or product and aim for a state of net-zero carbon dioxide emissions.