

Design & Technology Edexcel GCSE

Society

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 meant by "inclusive design"?

- A** Designing products that can be used by as many people as possible, whatever their age, ability or background
- B** Designing products only for the largest group of customers
- C** Designing products that include as many functions as possible

Q2. Which of the following is a negative impact of new technology on society?

- A** People can contact friends and family anywhere in the world
- B** People have less face-to-face interaction
- C** People can learn online from home

Q3. Which feature would most help an elderly user with arthritis to use a kitchen tool?

- A** Small, stiff buttons
- B** A smooth, glossy metal handle
- C** A large, soft, easy-grip handle

Q4. Which technology helps a visually impaired person use a smartphone?

- A** A screen reader that reads text aloud
- B** A larger battery
- C** A thinner case

Q5. Which research method would best help a designer understand the needs of elderly users?

- A** Copying a competitor's product
- B** Interviewing a group of elderly users
- C** Looking at the price list of similar products

Q6. Which one of the following is a feature of design in society?

- A** Focus on machines
- B** Focus on materials
- C** Focus on people

Q7. This question is about the impact of new technologies on our society.

Q7a. Using an example, analyse how technological advances are having a negative impact on our society. **(3 marks)**

Cars are manufactured globally.

Q7b. Explain how global manufacturing has a negative impact on our society. **(3 marks)**

Q8. Designers must consider the needs of different groups of people in society.

A designer wants to create a smart watch aimed at the elderly market.

Q8a. Give two methods of research the designer could carry out to make sure the product is successful for this user group. **(2 marks)**

1

2

Q8b. Discuss the importance of designers considering inclusive design when designing and developing consumer products such as an electric toothbrush. To support your answer refer to products that you are familiar with. **(6 marks)**

Answers

Q1. A

Q2. B

Q3. C

Q4. A

Q5. B

Q6. C

Q7a.

Answers must relate to new technologies. 1 mark for each effect/impact on society, 1 mark for analysing the impact suggested and 1 mark for justifying the answer given (3 marks). Two effects with a sound explanation can also be awarded 3 marks. Impacts could include:

- To reduce costs, manufacturing is done in developing countries where labour costs are much lower. This may keep retail costs lower, but job losses increase so unemployment rises
- Workers in developing countries may be treated unfairly, harming their health and wellbeing
- Reliance and dependency on technology reduces the use of our memory and the development of new skills
- A reduction in social face-to-face interaction and verbal communication skills (particularly with children)
- Anxiety and loneliness can result as new technologies are able to control all aspects of our lives
- Personal data is easily found and shared without the individual's awareness or consent
- Advances in technology can reduce the number of workers employed or lead to unemployment

Credit any other appropriate response.

Q7b.

1 mark for each negative impact and 1 mark for each explanation (3 marks). A maximum of 2 marks for identifying negative impacts without any explanation. Full marks can be awarded if one negative impact has been fully explained and justified. Negative impacts could include:

- Carbon footprint increased (1) due to transportation of products (1)

- Fairtrade policies are not followed (1) as companies try to drive down the selling price (1)
- Use of automation and technology results in job losses (1)
- Ethical and moral concerns (1) as manufacturing markets become more competitive, e.g. workers' wages are lowered (1), working conditions are poor (1) and this affects living standards (1)
- Cultural beliefs and values (1) within the country of manufacture can be ignored/not valued (1)
- Transportation can increase lead time (1) and shipping rates increase (1), which can be frustrating for the customer (1)
- Poor communication can lead to poor product quality (1), resulting in customer frustration and returns (1), which affects company success and possible job losses (1)
- Reduced local/national manufacturing output (1), reducing local jobs and national income (1)

Credit any other appropriate response.

Q8a.

Two from (2 marks):

- Focus groups
- Surveys/questionnaires
- Interviews
- User testing
- Looking at existing products
- Studying anthropometric data about users

Award credit for any other valid answer.

Q8b.

Discussion should include knowledge and understanding of the importance of designers considering inclusive design and may include:

- Inclusive design relates to barrier free use by all users, e.g. children, adults, the elderly, those with limited grip/arthritis, left and right handers, partial or limited sight, colour blindness, physical disabilities, language barriers, SEN needs and gender
- Failure to consider inclusive design can result in products that cause unnecessary frustration and exclusion, and can be hard or impossible to use
- Use of colour, e.g. neutral colours appeal to different genders
- Buttons and controls designed to be easily used by left/right handers or users with less mobility and limited grip/arthritis
- Symbols can help people who are illiterate/partially sighted or avoid language barriers
- User settings on mobile phones improve inclusivity: display, size of text, colours and sounds help those with limited sight or hearing
- Height of products or signage so people in wheelchairs are able to use/see them easily

Examples could relate to small handheld products such as the toothbrush, garden tools and kitchen gadgets, or larger products such as vehicles and furniture. Award credit for any other appropriate response.

Level	Marks	Descriptor
0	0	No response or no response worthy of credit.

1	1-2	Limited knowledge/understanding of inclusivity in relation to products. No attempt at evaluation and any examples may not be appropriate.
2	3-4	Some knowledge and understanding of inclusivity; this understanding may be limited to one group of users. Some analysis of products, which may have been used to evaluate the importance of inclusivity when designing products.
3	5-6	Good knowledge and understanding of inclusivity, demonstrating an understanding of different groups of users, e.g. disabled, the elderly or visually impaired. Good analysis of products, used to evaluate the importance of inclusivity when designing products.