

Answers and marking guidance

Award one mark per correct, developed point unless stated. Other valid answers should be credited.

2 Describe the impact of mass manufacturing on the workforce.

- Fewer workers needed as machines replace manual jobs
- Loss of traditional craft skills
- Workers must retrain for new skills such as CAD and machine maintenance
- Shift work so machines can run 24 hours
- Repetitive jobs can reduce motivation

No marks for: Unqualified "you get paid less"

3 Quick check

- a) Loss of traditional craft skills and fewer jobs
- b) Transport pollution
- c) Repair
- d) Using one material and labelling it

4 Key terms

- 1 – A
- 2 – E
- 3 – B
- 4 – C
- 5 – D
- 6 – F

5 Describe how automated production could affect the workforce and society.

- Fewer jobs, causing unemployment in some areas
- Workers retrain for skilled roles (programming, maintenance)
- De-skilling and loss of traditional crafts
- Safer workplaces with fewer injuries
- Cheaper products, more widely available
- Consumer and throwaway society

No marks for: Identifying an issue without describing the effect

6 Describe steps designers and manufacturers could take to reduce the negative environmental impact of products.

- Design for disassembly so parts can be separated
- Label materials for recycling
- Make products repairable/upgradeable to extend life
- Use less material and fewer different materials
- Source materials locally to reduce transport
- Use efficient processes and renewable energy
- Reduce packaging

No marks for: Check the question: some papers exclude recycled materials if given in the stem

7 Describe how environmental concerns have influenced the design, manufacture, use and disposal of products.

- Design: fewer parts and materials; design for disassembly; repairable; avoids planned obsolescence
- Manufacture: recycled or sustainable materials; efficient processes; less waste; local supply; less packaging
- Use: energy efficient; durable; repairable; lightweight for transport
- Disposal: recyclable and labelled materials; take-back schemes; upcycling
- Good answers give examples and cover several stages