Additional study question 1 (consolidation)   
Answer notes

## Question

A small independent car manufacturer based in Yorkshire has traditionally hand-built all of its vehicles using a small team of local engineers.

As more orders come into the business, the company has invested in robotic equipment to carry out certain repetitive tasks, such as welding.

Evaluate the impact of autonomous operation on the business and its employees.

[12 marks]

# Answer notes

## Command verb

* Evaluate. Consider various aspects of a subject’s qualities in relation to its context such as: strengths or weaknesses, advantages or disadvantages, pros and cons. Come to a judgement supported by evidence which will often be in the form of a conclusion.

## Impact of autonomous operation

## **Impact on business**

* **Efficiency**: robots are more efficient and more productive than humans. They can work 24/7 with no breaks or holidays.
* **Cost**: there are high initial costs, but there are ongoing cost savings such as labour costs, fewer errors, more efficient use of materials/ less wastage.
* **Scalability**: businesses can grow without relying on additional human resources.
* **Quality**: robots are more reliable with repeatable accuracy to fractions of a millimetre. Humans make mistakes that can affect quality.

## **Impact on employees**

* **Job automation:** there may be a reduction in staff as automation can reduce the need for a larger workforce.
* **Training and development:** automation means that job roles could change. This may mean employees need to retrain or upskill to remain employable.
* **Safety:** there is a reduction in potential injuries in the workplace.
* **Wellbeing:** although training can improve job security, an uncertainty on job security requires well-managed communication and support in place for all outcomes.

## **Ensuring a smooth transition**

* **Communication and transparency:** support and reassurance to all employees, informing them of all changes in advance, including any employment changes.
* **Training and development:** ensure training is available and encouraged for skill development. Create paths for growth (promotions etc) within the company.
* **Health and safety:** carry out new assessments on new equipment and scenarios.
* **Wellbeing:** ensure support is in place for stress and anxiety around job security.
* **Feedback:** encourage and sincerely take on board any employee and customer feedback.

# Mark scheme guidelines (generic)

|  |  |  |
| --- | --- | --- |
| **Level** | **Mark** | **Descriptor** |
|  | 0 | No rewardable material |
| Level 1 | 1–4 | * Demonstrates a basic analysis of the situation by superficially breaking down the different aspects into component parts (AO3) * Demonstrates basic application of knowledge and understanding that is partially relevant to the context of the question (AO2) * Demonstrates a basic evaluation which partially considers different factors/events and their relative importance, leading to a conclusion which is superficial or unsupported (AO3) |
| Level 2 | 5–8 | * Demonstrates a good analysis of the situation by breaking down the different aspects into component parts (AO3) * Demonstrates good application of knowledge and understanding that is relevant to the context of the question (AO2) * Demonstrates a good evaluation which considers different factors/events and their relevant importance, leading to a conclusion which is partially supported (AO3) |
| Level 3 | 9–12 | * Demonstrates a thorough analysis of the situation by comprehensively breaking down the different aspects into their component parts (AO3) * Demonstrates comprehensive application of knowledge and understanding that is consistently relevant to the context of the question (AO2) * Demonstrates a thorough evaluation which comprehensively considers different factors/events and their relative importance leading to a conclusion which is well supported (AO3) |