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| Candidate name | Centre number | | | | | Candidate number | | | | |
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**GCSE DIGITAL TECHNOLOGY**

**UNIT 1 THE DIGITAL WORLD**

**BLOCK 6: CHANGING DIGITAL TECHNOLOGIES**

**45 Minutes**

**INSTRUCTIONS FOR CANDIDATES**

Answer ALL questions.

* Write your name, centre number and candidate number in the spaces provided at the top of this page.
* Write your answers in the spaces provided in this booklet.
* Use black ink or black ball-point pen.
* You will need a pencil and ruler.
* Do not use correction fluid.

**INFORMATION FOR CANDIDATES**

* The number of marks is given in brackets at the end of each question or part question.
* You are advised to divide your time accordingly.
* The total number of marks available is 40.

1. Match each individual to their contribution in the development of communications, computing systems and digital devices.

|  |  |  |
| --- | --- | --- |
| 1. James Gosling |  | 1. The first computer programmer, the first person to realise computers could do more than just calculate numbers. |
| 1. Admiral Grace Hopper |  | 1. Developed the Java programming language. |
| 1. Alan Turing |  | 1. Devised the first commercial electronic computer. |
| 1. Steve Jobs |  | 1. Developed computational theory upon which modern computing is based. |
| 1. Sir Tim Berners-Lee |  | 1. Commoditised computing, and developed smartphones and handheld devices. |
| 1. Ada Lovelace |  | 1. Inventor of the World Wide Web. |

**[6]**

1. Artificial intelligence (AI) is a wide-ranging branch of computer science concerned with building smart machines capable of performing tasks that typically require human intelligence.

Machine learning and deep learning are two branches of AI.

1. Describe what is meant by these terms:

Machine learning

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**[2]**

Deep learning

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**[2]**

1. List **three** technologies that use AI.

1…………………………………………………………………………………………………………………..

2…………………………………………………………………………………………………………………..

3…………………………………………………………………………………………………………………..

**[3]**

1. “Most people would agree that driverless cars are the future, but not all stakeholders would necessarily agree with this statement.”

Stakeholders include: Customers, businesses, suppliers, government, local community and employees

Discuss the impact of increased use of driverless cars. In your answer you might consider the impact on: **[QWC]**

* Stakeholders
* Legal issues
* Ethical issues
* Environmental issues

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**[8]**

1. Computer-controlled technology such as robots are becoming increasingly common in the workplace and in particular, the manufacturing industry.
2. Explain **two** reasons why computer-controlled technology could have a positive impact on businesses.

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**[4]**

1. Explain **two** reasons why computer-controlled technology could have a negative impact on businesses.

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**[4]**

1. Explain the impact the use of computer-controlled technology can have on the rate of employment.

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**[3]**

1. The Internet of Things (IoT) enables physical objects embedded with sensors that connect and exchange data with other devices over a network. A smart home is a common example of this concept.

Draw a fully labelled diagram to demonstrate the structure of a smart home using the box provided below. It must include **four** smart devices and a router.

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|  |

**[8]**

**END OF QUESTION PAPER**