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|  | |  |  | | --- | --- | | **Computer Science (9-1)**  Impact of CS Set 1 Paul Burgess |  | | Please note that you may see slight differences between this paper and the original.  Candidates answer on the Question paper.  **OCR supplied materials:** Additional resources may be supplied with this paper.  **Other materials required:** •   Pencil •   Ruler (cm/mm) | **Duration:** Not set | |  | | |  |

## INSTRUCTIONS TO CANDIDATES

•   Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.  
•   Use black ink. HB pencil may be used for graphs and diagrams only.  
•   Answer **all** the questions, unless your teacher tells you otherwise.  
•   Read each question carefully. Make sure you know what you have to do before starting your answer.  
•   Where space is provided below the question, please write your answer there.  
•   You may use additional paper, or a specific Answer sheet if one is provided, but you must clearly show your candidate number, centre number  
    and question number(s).

## INFORMATION FOR CANDIDATES

•   The quality of written communication is assessed in questions marked with either a pencil or an asterisk. In History and Geography   
    a *Quality of extended response* question is marked with an asterisk, while a pencil is used for questions in which *Spelling, punctuation and  
    grammar and the use of specialist terminology* is assessed.  
•   The number of marks is given in brackets **[ ]** at the end of each question or part question.  
•   The total number of marks for this paper is **20**.  
•   The total number of marks may take into account some 'either/or' question choices.

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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | |  |  | | --- | --- | |  |  | | **1.** | A small island has 100 people living on it. The island has just been connected to the Internet, after previously having no Internet or mobile phone signal.  Discuss the impact on the island’s inhabitants and businesses of getting access to the Internet.  In your answer you might consider the impact on:   * inhabitants * businesses * ethical issues * privacy issues                                         **[8]** | | |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | |  |  | | --- | --- | |  |  | | **2.** | Even though the computer devices they own still work, people often want to buy the most up-to-date models, such as the latest smartphone.  Discuss the impact of people wanting to upgrade to the latest smartphone.  In your answer you might consider the impact on:   * stakeholders * technology * ethical issues * environmental issues                                   **[8]** | | |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | |  |  | | --- | --- | |  |  | | **3.** | \*Lauren is a Computing teacher. She is building a website for her Computing class where they can share ideas, send each other programs and discuss computing concepts. The students will have individual accounts that they can log into.  Discuss the ethical and legal issues Lauren will have to consider when setting up the website.  The quality of your written communication will be assessed in your answer.                                    **[6]** | | |

**END OF QUESTION paper**

# Mark scheme

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| **Question** | | | **Answer/Indicative content** | **Marks** | **Guidance** |
| 1 |  |  | **Mark Band 3-High Level** **(6–8 marks)** The candidate demonstrates a thorough knowledge and understanding of a wide range of considerations in relation to the question; the material is generally accurate and detailed. The candidate is able to apply their knowledge and understanding directly and consistently to the context provided. Evidence/examples will be explicitly relevant to the explanation. The candidate is able to weigh up both sides of the discussion and includes reference to the impact on all areas showing thorough recognition of influencing factors. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.  **Mark Band 2-Mid Level** **(3–5 marks)** The candidate demonstrates reasonable knowledge and understanding of a range of considerations in relation to the question; the material is generally accurate but at times underdeveloped. The candidate is able to apply their knowledge and understanding directly to thecontext provided although one or two opportunities are missed. Evidence/examples are for the most part implicitly relevant to the explanation. The candidate makes a reasonable attempt to discuss the impact on most areas, showing reasonable recognition of influencing factors. There is a line of reasoning presented with some structure. The information presented is in the most part relevant and supported by some evidence.   **Mark Band 1-Low Level** **(1–2 marks)** The candidate demonstrates a basic knowledge of considerations with limited understanding shown; the material is basic and contains some inaccuracies. The candidate makes a limited attempt to apply acquired knowledge and understanding to the context provided. The candidate provides nothing more than an unsupported assertion. The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear.  **0 marks** No attempt to answer the question or response is not worthy of credit | 8 AO2 1a (4) AO2 1b (4) | The following is indicative of possible factors/evidence that candidates may refer to but is not prescriptive or exhaustive: **Indicative Content:**  Inhabitants   * Connection with the rest of the world * Access to more information * Up-to-date with news * E-commerce * Communication with people * Can be used in schools/for education * Cost (Devices and connection)   Businesses   * Sell products to wider audience/more customers * Purchase items from wider range/more places * Competitive prices * Tourism can be advertised * Online bookings for hotels   Ethical issues   * Access to inappropriate/illegal content * Lead to social pressure to be online and get technology * Cost * Introduces digital and social divide * Threats   Privacy issues   * Tracking of IPs/devices * Social media * Unwanted images and videos of people may be put online * Risk of threats e.g. phishing/pharming/virus   **Examiner’s Comments**  Most candidates tackled this question well, demonstrating a good understanding of the potential issues and structuring an appropriate response. The most common responses were given as essays, with the more able candidates allocating a paragraph to each to areas given in the questions.  The question required a discussion of the impact of the Internet on both the inhabitants and businesses. A discussion of the impact requires both positive and negative impacts. The more able candidates tackled each area in turn, giving the positive and negative sides to each area.  Less able candidates provided limited depth in their responses, giving an example of a drawback to a business but not then expanding this to explain the potential impact.  More able candidates were able to evaluate the impact and gave a reasoned conclusion that summarised their findings.  There were some answers where candidates assumed that without the Internet the inhabitants had no means of communication, access to and/or knowledge of the world beyond their island.  Exemplar 7   This candidate began by describing the advantages to business, and then the benefits to inhabitants in paragraph 2. They have identified a drawback to inhabitants, and a general drawback of security risks – covering privacy/ethical issues. The candidate has covered at least three of the bullet points given in the question and given both positive and negative impacts. It was not credited with full marks because it was felt there could have been further expansion e.g. how the lack of security could impact the businesses, and an overall conclusion as to the impact.       Exemplar 8   This candidate has given a point of relevance in the first paragraph, but not explained how this is an impact. They have also attempted to give a privacy issue, but this is vague. The second paragraph states that inhabitants can now be educated, but they could be without the Internet – this is not an impact; if they had explained that it gives easier access to a greater range of information then this would have been more relevant. They have identified that businesses can grow through greater distribution, but again this is not expanded suitably into a positive impact. The candidate has given a couple of points of relevance and attempted to explain them, but it is lacking depth and clarity. There are two areas covered. This is a low-medium level response, but the relevant points allowed it to gain access to the medium band.             Exemplar 9   The candidate has given a number of points which are all relevant. They have covered at least three of the bullet points. The response lacked depth for each point, so despite there being a number of points, these were not explained as to their impact. This is therefore restricted to the middle band. |
|  |  |  | **Total** | **8** |  |
| 2 |  |  |  | Enter text here. |  |
|  |  |  | **Mark Band 3-High Level** **(6-8 marks)** The candidate demonstrates a thorough knowledge and understanding of a wide range of considerations in relation to the question; the material is generally accurate and detailed. The candidate is able to apply their knowledge and understanding directly and consistently to the context provided. Evidence/examples will be explicitly relevant to the explanation. The candidate is able to weigh up both sides of the discussion and includes reference to the impact on all areas showing thorough recognition of influencing factors.  There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.  **Mark Band 2-Mid Level** **(3-5 marks)** The candidate demonstrates reasonable knowledge and understanding of a range of considerations in relation to the question; the material is generally accurate but at times underdeveloped. The candidate is able to apply their knowledge and understanding directly to the context provided although one or two opportunities are missed. Evidence/examples are for the most part implicitly relevant to the explanation. The candidate makes a reasonable attempt to discuss the impact on most areas, showing reasonable recognition of influencing factors. There is a line of reasoning presented with some structure. The information presented is in the most part relevant and supported by some evidence.  **Mark Band 1-Low Level** **(1-2 marks)** The candidate demonstrates a basic knowledge of considerations with limited understanding shown; the material is basic and contains some inaccuracies. The candidate makes a limited attempt to apply acquired knowledge and understanding to the context provided. The candidate provides nothing more than an unsupported assertion.  The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear.  **0 marks** No attempt to answer the question or response is not worthy of credit. | 8 | The following is indicative of possible factors/evidence that candidates may refer to but is not prescriptive or exhaustive:  **Indicative Content:**  Stakeholders   * Can adversely affect people in this country and abroad:   + health issues   + financially   + socially   + culturally * The phone manufacturers * The phone shops/networks   Technology   * The type of devices that are disposed of * Modern phones poorly designed for durability * Phones hardware not upgradeable/replaceable * Proprietary technology used by some manufacturers   Environmental   * Reference to e-waste (people dispose of their devices in landfill even if they are in good working order) * Some equipment is also sent abroad to be disposed of * Leads to excessive landfill (in this country and/or abroad, e.g. Africa and Asia) * Toxic waste released into land, ground water, air (in this country and/or abroad, e.g. Africa and Asia) * Waste of resources Precious metals in phones   Ethical Issues   * Contributes to ill health * Contributes to the digital divide * Contributes to social divide * Problem of confidential data stored on the devices * Puts social pressure on parents to pay for their children to upgrade * Puts social pressure on the public to upgrade * Can lead to bullying of those who cannot afford the latest technology * Phone manufacturers intentionally designing fragile phones so they need to be replaced more often * High cost of new devices. |
|  |  |  | **Total** | **6** |  |
| 3 |  |  | \* Points may include: **Legal**   * Data Protection Act * Rules of DPA * Keeping data secure, need for firewall, anti-virus * Methods of restricting access * Intellectual property / copyright / licences   **Ethical**   * Storing and access to personal information * Rules / terms set up before people can join * Consequences for misconduct e.g. cyberbullying * Plagiarism * Communication of inappropriate materials for students / school / teacher * Backing up to preserve / save data * Gaining parental consent for communication online * E-safety * Acceptable use policy | 6 | **High Level Response (5–6):**  A detailed discussion of the ethical **and**legal issues, with clear explanations that are linked to the scenario. There will be few if any errors in spelling, grammar and punctuation. Technical terms will be used appropriately and correctly.  **Medium Level Response (3–4):** A description of some ethical **and / or** legal issues with some explanation / justification. Material may not be explicitly linked to the context. There may be occasional errors in spelling, grammar and punctuation. Technical terms will be mainly correct.  **Low Level Response (1–2):** There is an attempt to describe either a legal issue **and / or** ethical issue. The points are poorly expressed and / or not related to the context. There is limited, if any, use of technical terms. Errors in grammar, punctuation and spelling may be intrusive.   **Examiner's Comments**  The majority of candidates wrote a reasonable, structured response to this question. The most common legal issues identified were the Data Protection Act and copyright. Some candidates found the ethical issues more difficult to identify, and confused these with legal issues. The responses given were often well contextualised to the situation. |
|  |  |  | **Total** | **6** |  |