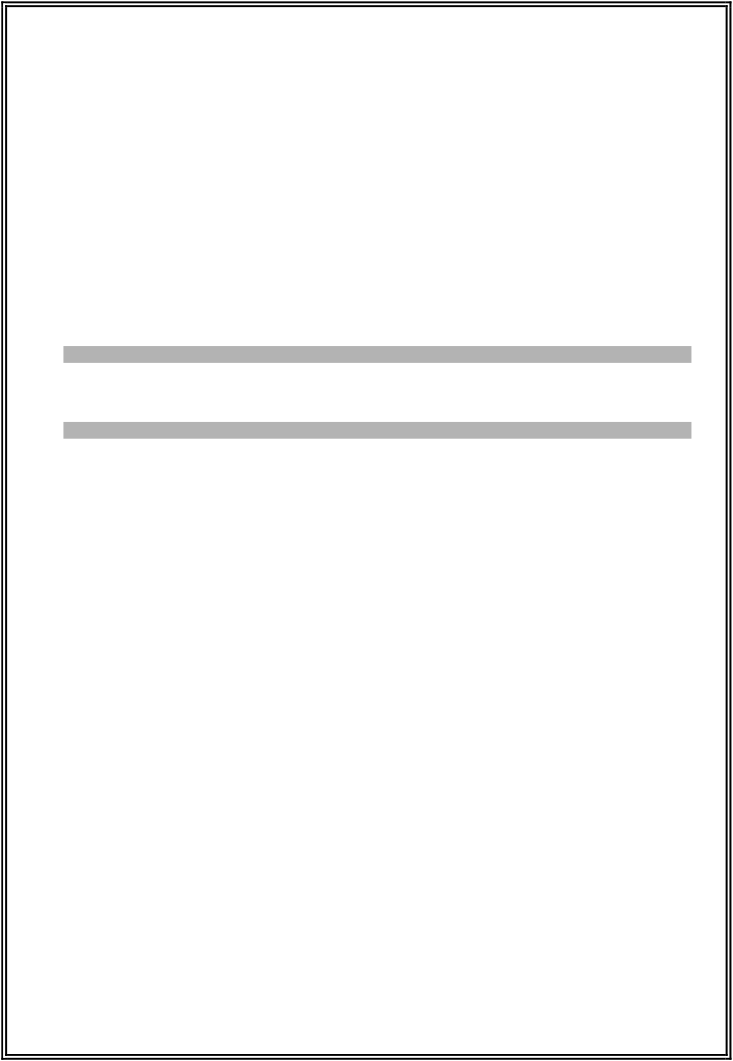
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**GCE A LEVEL MARKING SCHEME**



**SUMMER 2017**

**A LEVEL (NEW)**

**COMPUTER SCIENCE - COMPONENT 2 A500U20-1**

**INTRODUCTION**

This marking scheme was used by WJEC for the 2017 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

**GCE A LEVEL COMPUTER SCIENCE SUMMER 2017 MARK SCHEME**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Mark | AO1 | AO2 | AO3 | Total |
| 1a | Accept either:  CREATE TABLE Order  (  orderNo int NOT NULL, customerNo int NOT NULL, orderDate datetime, handlingCost numeric(5,2), PRIMARY KEY (orderNo)  )  or  CREATE TABLE Order  (  orderNo int NOT NULL PRIMARY KEY, customerNo int NOT NULL, orderDate datetime,  handlingCost numeric(5,2),  )  **Award one mark for each of the following:**   * Correct construct (CREATE TABLE with brackets in correct places) * Identifying PRIMARY KEY * NOT NULL on key field * Numeric(x,2), 2 has to be present x can be any sensible number representing pounds | 1  1 1 1 |  |  | b  b b b | 4 |
| 1bi | SELECT customerName, customerPhone FROM Customer ORDER BY customerPostcode  1 mark for SELECT, 1 for ORDER BY | 2 |  |  | b | 2 |
| 1bii | SELECT customerName, customerPhone FROM Customer WHERE customerNo = (SELECT customerNo FROM Order WHERE orderDate < 01/03/2016)  1 mark for each SELECT…. FROM… WHERE …  Accept but not expect:  SELECT customerName, customerPhone FROM Customer JOIN Order WHERE orderDate < 01/03/2016 | 2 |  |  | b | 2 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Mark | AO1 | AO2 | AO3 | Total |
| 1biii | SELECT \* FROM Order WHERE customerNo = 27 ORDER BY handlingCost DESC  Or  SELECT orderNo, orderDate, handlingCost FROM Order WHERE customerNo = 27 ORDER BY handlingCost DESC  1 mark for SELECT, 1 mark for ORDER BY with DESC | 2 |  |  | b | 2 |
| 2 | Example working solution  CLR  LDA 1B  STA 20 ROW: LDA 1B  STA 21 COL: OUT 1A  LDA 21  DEC 1C  STA 21  JGT COL  LDA 20  DEC 1C  STA 20  OUT 1D  JGT ROW  CLR  Or any other working solution.  **Award one mark for each of the following:**   * Output newline character and star * Inner loop for printing stars * Correct number of columns * Outer loop for printing rows * Correct number of rows * Working solution | 1 1 1 1 1 1 |  |  | b b b b b b | 6 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Mark | AO1 | AO2 | AO3 | Total |
| 3a | **Award one mark for each of the following:**   * Labelling the data, address and control bus paths correctly (arrows need not be shown) * Identifying all the components correctly * Using the accepted drawing convention for components in the CPU (as detailed in the specification) | 1  1 1 | a  a a |  |  | 3 |
| 3b | **Award one mark for each of the following, up to a maximum of four marks:**   * Cache memory attempts to solve the “Von Neumann Bottleneck” where the processor runs much faster than the memory by acting as a middleman between main memory and the registers. * Cache is small, extremely fast memory * Placed near or on the processor. * Data and instructions that are used regularly are stored in cache and retrieved by the processor when necessary. * When the cache is full least recently used data is discarded. * Algorithms try to avoid a cache miss (when data has to be fetched from main memory rather than cache). | 4 | b |  |  | 4 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Mark | AO1 | AO2 | AO3 | Total |
| 4 | **Advantages (Award one mark for each of the following, up to a maximum of four marks [six marks in total]):**   * Speech is a very natural way to interact, and it is not necessary to use a keyboard or work with a remote control * No training required for users * Voice is hands-free making it suitable for use in a variety of environments e.g. driving * Suitable for the disabled (qualified) * Can be used to drive several apps in a sequence e.g. Find John Smith and give me directions to him. * Faster than typing on a keyboard (must be qualified not just faster).   **Disadvantages (Award one mark for each of the following, up to a maximum of four marks [six marks in total]):**   * Even the best speech recognition systems sometimes make errors e.g. homophones * If there is noise or some other sound in the room (e.g. the television or a kettle boiling), the number of errors will increase * Regional accents can affect the outcome * Requires data connection to interpret speech and return results * Delivering sensitive information e.g. credit card details could be a security risk. * Only understands certain foreign languages   Any other credible advantage / disadvantage. Advantages and disadvantages can’t be the reverse of each other. | 6 |  | b |  | 6 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Mark | AO1 | AO2 | AO3 | Total |
| 5a | **TCP/IP**   * **Use:** allows any networked computers to communicate with each other * **Importance:** TCP/IP creates packets of data and specifies how packets are routed and transported around a network   **FTP**   * **Use:** allows the transfer of(large) files over a network. * **Importance:** the FTP protocol has in-built error checking / re-transmission request as necessary. | 1 1  1 1 | b b  b b |  |  | 4 |
| 5b | **Award one mark for each of the following, up to a maximum of four marks:** |

**This document was truncated here because it was created in the Evaluation Mode.**