

## Computer Science Papers Revision Pack

[P:\Students\Course information Y11\GCSE Computer Science Course Info.docx]

### Overview

| Paper  | Marks | Duration | Weighting | Topics covered on this paper  |
|--|-------|----------|-----------|---|
| Paper 1:<br>Computer<br>Systems  | 80    | 1½ Hours | 50%       | <ul style="list-style-type: none"><li>• Components of a Computer System</li><li>• Networks</li><li>• Issues: Ethical, legal, cultural and environmental</li></ul>                           |
| Paper 2:<br>Computational<br>thinking,<br>algorithms<br>and<br>programming | 80    | 1½ Hours | 50%       | <ul style="list-style-type: none"><li>• Algorithms</li><li>• Programming techniques</li><li>• Design Testing and IDES</li><li>• Computational logic</li><li>• Data representation</li></ul> |

**June 2018 Paper 1 - all page numbers are from the CGP Revision Guide (blue book).**

| Question | Topic                    | CGP Page No | Comments   |
|----------|--------------------------|-------------|--|
| 1(a)(i)  | Secondary Storage        | 6           | Common area to revise  |
| 1(a)(ii) | Solid state storage      | 6           | Common area to revise  |
| 1(b)(i)  | Units                    | 66          | Cross refers to knowledge needed for Paper 2. Just as you would in maths, convert everything down to the same common unit. In this case, megabytes (1GB = 1000 megabytes) and complete the remaining calculation. Remember to show calculation clearly to get full marks   |
| 1(b)(ii) | Algorithms and Units     | 66          | Tests knowledge of Units as well as ability to write algorithms (cross reference to Paper 2). Key fact to this question: <b>each Unit is 1024 times bigger than the next size down.</b> E.g. 1 KB is 1024 times bigger than 1 Byte. So you would have to multiply 1KB * 1024 to get the total number of bytes and so on. |
| 1(c)(i)  | Backups                  | 10          | Common area to revise  |
| 1(c)(ii) | Utilities                | 10          | Common area to revise  |
| 1(d)     | Computer Legislation     | 31          | Common area to revise  |
| 2(a)     | Networks                 | 13-23       | Straightforward question   |
| 2(b)     | Networks                 | 13-23       | Straightforward question   |
| 2(c)(i)  | Networks                 | 14 & 18     | Knowledge needed of routers and packets.   |
| 2(c)(ii) | Networks                 | 14          | Straightforward question   |
| 2(d)(i)  | Internet                 | 20          | Straightforward question   |
| 2(d)(ii) | Packet Switching         | 18          | Clear knowledge needed of packet switching - revise, as this is a regular question   |
| 2(e)     | Network Security Threats | 21-23       | Network security is a topic which usually comes up.  |

|                  |                             |       |  |
|------------------|-----------------------------|-------|--|
| 3                | Ethical and Cultural Issues | 25-29 | There is a * beside the question number. This indicates a Level of Response (LOR) question. This is marked according to three bands, higher, middle or lower. Use each subheading given in the question to help structure each section of your answer. |
| 4(a)             | CPU                         | 3     | Questions on CPU/Von Neumann Architecture come up in every paper, especially multi-part questions like this. Basic knowledge of CPU architecture and role of registers required.   |
| 4(b)             | Clock speed                 | 5     | Knowledge of how a clock speed is calculated needed here.  |
| 4(c)             | CPU cores                   | 5     | Need to know difference between dual and quad cores. Full explanation given on page 5.   |
| 4(d)(i)          | Virtual memory & RAM        | 4     | Ensure that you make three different points to get each of the three marks   |
| 4(d)(ii)         | Virtual memory & RAM        | 4     | Again, two different points needed for full marks  |
| 5(a)             | Network Protocols           | 17    | Another topic which regularly comes up. Explanation on page 17   |
| 5(b)(i) and (ii) | Network Protocols           | 19    | Good knowledge needed of TCP/IP and the protocols contained which perform the main tasks.  |
| 5(c)             | Network Protocols           | 19    | Good knowledge needed of TCP/IP and the protocols contained which perform the main tasks.  |

**June 2018 Paper 2 - all page numbers are from the CGP Revision Guide (blue book).**

| Question        | Topic                               | CGP Page No     | Comments  |
|-----------------|-------------------------------------|-----------------|---|
| 1a              | Data types                          | 41              | Common question - easy marks, so well worth knowing your basic data types   |
| 1b (i) and (ii) | SQL Statements                      | 53              | SQL statements are simple to learn. Unlikely to get question worth more than 3 marks, so again worth learning to get quick marks  |
| 1c              | Arrays                              | 49              | Tests your knowledge of one dimensional arrays and algorithms (written in pseudocode)   |
| 2               | Algorithms                          | 34-35,45-46, 55 | Tests knowledge of program flow and variables   |
| 3               | Logic Gates                         | 64-65           | Ensure you know your boolean algebra to answer 3b   |
| 4(a)            | Algorithms                          | 33-40           | Tests your knowledge of algorithms (written in pseudocode)  |
| 4(b)            | Functions/Procedures                | 54-55           | Revision of this area needed for straightforward marks  |
| 4c(i)           | Merge Sort                          | 38              | Revision and practice of merge sorts needed for straightforward marks   |
| 4c(ii)          | Merge and Bubble Sorts              | 37-38           | As above  |
| 5(a)            | Binary                              | 67-69           | Ensure that you practice binary calculations (conversions, additions and shifts)  |
| 5(b)            | ASCII and Extended ASCII characters | 72              | Straightforward question. Also worth learning about Unicode. Is not covered in this question, but also comes up as it covers all major languages and emojis ( <a href="https://unicode.org/">https://unicode.org/</a> ) |
| 6(a)            | Loops                               | 47              | Tests your knowledge of definite and indefinite loops as well as pseudocode   |
| 6(b)            | Loops                               | 47              | Read the question carefully - note that it asks for a <b>counter controlled</b>   |

|      |                                  |       |   |
|------|----------------------------------|-------|---|
|      |                                  |       | loop. You can use one of the code fragments given to help you construct the answer...   |
| 7(a) | High level and machine languages | 61    | Revise  |
| 7(b) | IDE                              | 62    | Revise  |
| 8    | Algorithms                       | 33-40 | A six marker, so ensure you plan your answer well. You can use pseudocode or flowcharts to answer. Think about: which variables you need to set up, how you will program the parts of the program that repeat, how you will display output. |