

### Exam 1 Computer Science Revision Homework

Revise = READ, COVER, WRITE, REPEAT.

e.g. Read revision book/revision card. Turn it over. Parent tests you. Practice again until you can recall.  
20-30 minute sessions at a time. 2-3 times per week (for Computing)

Topic	Date Due in	Content All content hyperlinked to revision videos	RAG, Questions and queries
1.1 Systems architecture	27/11	<ol style="list-style-type: none"> <li>· <a href="#">the purpose of the CPU</a></li> <li>· <a href="#">Von Neumann architecture:</a> <ol style="list-style-type: none"> <li>o MAR (Memory Address Register)</li> <li>o MDR (Memory Data Register)</li> <li>o Program Counter</li> <li>o Accumulator</li> </ol> </li> </ol>	
	04/12	<ol style="list-style-type: none"> <li>· <a href="#">common CPU components and their functions:</a> <ol style="list-style-type: none"> <li>o ALU (Arithmetic Logic Unit)</li> <li>o CU (Control Unit)</li> <li>o Cache</li> </ol> </li> <li>· <a href="#">the function of the CPU as fetch and execute instructions stored in memory</a></li> <li>· <a href="#">how common characteristics of CPUs affect their performance:</a> <ol style="list-style-type: none"> <li>o clock speed</li> <li>o cache size</li> <li>o number of cores</li> </ol> </li> <li>· <a href="#">embedded systems:</a> <ol style="list-style-type: none"> <li>o purpose of embedded systems</li> <li>o examples of embedded systems.</li> </ol> </li> </ol>	
1.2 Memory	11/12	<ol style="list-style-type: none"> <li><a href="#">the difference between RAM and ROM</a></li> <li><a href="#">the purpose of ROM in a computer system</a></li> <li><a href="#">the purpose of RAM in a computer system</a></li> <li><a href="#">the need for virtual memory</a></li> <li><a href="#">flash memory.</a></li> </ol>	
1.3 Storage	18/12	<ol style="list-style-type: none"> <li><a href="#">the need for secondary storage</a></li> <li><a href="#">data capacity and calculation of data capacity requirements</a></li> <li><a href="#">common types of storage:</a> <ol style="list-style-type: none"> <li>optical</li> <li>magnetic</li> <li>solid state</li> </ol> </li> <li><a href="#">suitable storage devices and storage media for a given application, and the advantages and disadvantages of these, using characteristics:</a> <ol style="list-style-type: none"> <li>capacity</li> <li>speed</li> <li>portability</li> <li>durability</li> <li>reliability</li> <li>cost.</li> </ol> </li> </ol>	



		<ul style="list-style-type: none"> <li>h. poor network policy</li> <li>3. <a href="#">Identifying and preventing vulnerabilities:</a> <ul style="list-style-type: none"> <li>a. penetration testing</li> <li>b. network forensics</li> <li>c. network policies</li> <li>d. anti-malware software</li> <li>e. firewalls</li> <li>f. user access levels</li> <li>g. passwords</li> <li>h. encryption.</li> </ul> </li> </ul>	
<b>1.7 Systems software</b>	5/2	<ul style="list-style-type: none"> <li>1. <a href="#">the purpose and functionality of systems software</a></li> <li>2. <a href="#">operating systems:</a> <ul style="list-style-type: none"> <li>a. user interface</li> <li>b. memory management/multitasking</li> <li>c. <a href="#">peripheral management and drivers</a></li> <li>d. user management</li> <li>e. file management</li> </ul> </li> <li>3. <a href="#">utility system software:</a> <ul style="list-style-type: none"> <li>a. encryption software</li> <li>b. defragmentation</li> <li>c. data compression</li> <li>d. the role and methods of backup: <ul style="list-style-type: none"> <li>i. full</li> <li>ii. incremental.</li> </ul> </li> </ul> </li> </ul>	
<b>1.8 Ethical, legal, cultural and environmental concerns</b>	12/2	<ul style="list-style-type: none"> <li>1. <a href="#">how to investigate and discuss Computer Science technologies while considering:</a> <ul style="list-style-type: none"> <li>a. ethical issues</li> <li>b. legal issues</li> <li>c. cultural issues</li> <li>d. environmental issues</li> <li>e. <a href="#">privacy issues.</a></li> </ul> </li> <li>2. <a href="#">how key stakeholders are affected by technologies</a></li> <li>3. <a href="#">environmental impact of Computer Science</a></li> <li>4. <a href="#">cultural implications of Computer Science</a></li> <li>5. <a href="#">open source vs proprietary software</a></li> <li>6. <a href="#">legislation relevant to Computer Science:</a> <ul style="list-style-type: none"> <li>a. The Data Protection Act 1998</li> <li>b. Computer Misuse Act 1990</li> <li>c. Copyright Designs and Patents Act 1988</li> <li>d. Creative Commons Licensing</li> <li>e. Freedom of Information Act 2000.</li> </ul> </li> </ul>	