



## Codefez Systems Architecture, Memory & Storage Worksheet 1 Answers

Q	Answer	Mark	Guidance								
1a	1 mark for any of the following: <ul style="list-style-type: none"><li>- Program counter</li><li>- Memory Address register</li><li>- Memory Data Register</li><li>- Current Instruction Register</li><li>- Accumulator</li></ul>	3									
1b	1 mark for any of the following: <ul style="list-style-type: none"><li>- Arithmetic Logic Unit</li><li>- Control Unit</li><li>- Cache</li></ul>	2									
2	It contains the address of the next instruction to be executed	1									
3	<table><tr><td>Storage</td><td>Type</td></tr><tr><td>RAM</td><td>Primary</td></tr><tr><td>Hard Disk</td><td>Secondary</td></tr><tr><td>Virtual Memory</td><td>Secondary</td></tr></table>	Storage	Type	RAM	Primary	Hard Disk	Secondary	Virtual Memory	Secondary	3	
Storage	Type										
RAM	Primary										
Hard Disk	Secondary										
Virtual Memory	Secondary										
4	1 mark for any of the following: <ul style="list-style-type: none"><li>- The computer can carry out 1 billion</li><li>- ... fetch, decode and execute cycles per second.</li></ul>	2									
5	Eg. Portable <ul style="list-style-type: none"><li>- CD / BlueRay / DVD → small and light to carry</li><li>- USB Flash Drive → Small in size, durable &amp; light in weight</li><li>- SD Card → Small in size &amp; light in weight</li></ul> Non-portable <ul style="list-style-type: none"><li>- Magnetic Hard Disk → 3.5 inch disks can be heavy &amp; both 2.5/3.5 inch disks have moving parts that can damage if dropped<ul style="list-style-type: none"><li>○ (This may include the term Desktop hard drive which usually requires a separate power source and an enclosure.)</li></ul></li></ul>	6	Do not accept cloud storage in this case								
6	Considerations for Sarah’s laptop may include: <ul style="list-style-type: none"><li>- Although the CPU clockspeed is slower</li><li>- ... it has 4 cores and may deal with simultaneous instructions faster</li><li>- It has a larger hard drive for storing game files</li></ul>	3									

	<p>Considerations for Zainab's PC may include:</p> <ul style="list-style-type: none"> <li>- It has a faster clock speed</li> <li>- Although it has less cores, some software will not be able to make use of more cores anyway</li> </ul> <p>It has more RAM meaning it can store more/larger programs/instructions open without having to resort to using virtual memory.</p>		
7	<p>1 mark for any of the following:</p> <ul style="list-style-type: none"> <li>- Graphics Card for dedicated processing of graphics instruction away from the CPU</li> <li>- Sound card for a dedicated and richer sound experience</li> <li>- The type of cooler used by the computer. The more efficiently a computer is cooled, the better and more efficiently it can carry out instructions.</li> <li>- Internet connection may be important when playing games online for an experience without lag.</li> </ul>		

