

3.7. Computer Organisation and Architecture – Test 1

1. Explain, using an example, what is meant by a 'peripheral'. [2]

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2. A motherboard is often referred to as the 'heart' of the computer system. This is because it sends signals and electricity around the computer system to the various components, in a similar way that the heart does with blood in the body.

- a) Name three hardware components that can be physically connected to a motherboard. [3]

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3.....

- b) Give three technological factors to consider when choosing a motherboard for a computer system. [3]

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3. a) Briefly explain the functional role of each of the following.

- i. CPU

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- ii. ROM

[1]

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- iii. RAM

[1]

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- b) What does the ALU (Arithmetic Logic Unit) do?

[2]

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c) Modern computers often contain chips with multiple cores. Explain what is meant by 'multiple cores' and describe two scenarios where increasing the number of cores will improve the performance of a system. [3]

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4. Explain the difference between a Von Neumann architecture and a Harvard architecture. For each architecture give an example of an application the architecture is typically used for. [3]

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5. Name three basic-assembly / machine-code instructions and briefly describe what they are used for. [6]

Instruction:

Description:

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Instruction:

Description:

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Instruction:

Description:

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6. The financial sector requires robust backup systems that can be relied upon not to fail. A particular company has been offered two alternative configurations – one containing a solid-state disk and the other containing a traditional hard disk drive. Give two reasons why a solid-state disk may be chosen over the hard disk drive. [2]

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7. Explain, with reasoning, each step of the Fetch–Execute Cycle in detail. [10]

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