**OBHS Core Questions:**

Subject: Computing
Year and Term: Year 10 Autum 1
Topic: Systems Architecture

OLD BUCKENHAM
HIGH SCHOOL

Learn these questions to build a strong foundation of knowledge for this half-term. Ask family or friends to test you regularly, or practise on your own using the 'Look, Say, Cover, Write' method.

| | **Question** | **Answer** |
|---|---|---|
| 1. | What is the CPU? | Central Processing Unit |
| 2. | What does the CPU do? | Fetch, Decode and Execute instructions |
| 3. | What are the key components of the CPU? | ALU, CU, Cache, Registers |
| 4. | What is the ALU and what does it do? | Arithmetic Logic Unit, responsible for calculations and logical operations |
| 5. | What is the CU and what does it do? | Control Unit, direct each of the other components in the CPU |
| 6. | What is Cache and was does it do? | A small piece of super-fast data that holds frequently used instructions |
| 7. | What are registers? | Small memory locations that store data |
| 8. | What are the four registers found on the CPU? | MAR (Memory Address Register), MDR (Memory Data Register), Program Counter, Accumulator |
| 9. | What does the CPU clock do? | One FDE cycle is completed per tick, keeps all the components in time |
| 10. | What is the CPU clock measured in? | Hz – per second (10 kHz = 10000 cycles per second) |
| 11. | How does the cache size affect CPU performance? | More cache = hold more instructions that can be access faster, improving the CPU performance |
| 12. | What is a core? | A set of the components within the CPU |
| 13. | How do the number of cores affect the CPU performance? | More core = able to execute more instructions simultaneously |
| 14. | What is an Embedded System? | A piece of technology with a very specific function |
| 15. | Give three examples of embedded systems | Washing Machine, Central Heating, Roomba |
| 16. | What are the two types of primary storage? | RAM and ROM |
| 17. | What is RAM? | Random Access Memory |
| 18. | What does the RAM hold? | Instructions and data for programs currently in use |
| 19. | RAM is volatile. What does this mean? | All the data is lost when the computer loses power |
| 20. | What is ROM? | Read Only Memory |
| 21. | What does ROM hold? | The instructions for booting up the computer |
| 22. | ROM is Non-Volatile. What does this mean? | Data remains even when power is lost |
| 23. | What is Virtual Memory and when is it used? | A section of the Hard Drive that acts as RAM when RAM becomes full |

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| 24. | What is the problem with Virtual Memory? | It is much slower |