

A Level Computer Science

Task One: Specification

Access the Eduqas Computer Science specification and have a look at the different topics that you will study over the two-year period at Bilborough College. Are there any topics you are familiar with?

Note Make sure to download the document titled A Level Computer Science Specification*

https://www.eduqas.co.uk/qualifications/computer-science-as-a-level/#tab_keydocuments



Task Two: Computer Architecture & Boolean Logic

Using your phone, scan the QR code or the link provided (<https://www.youtube.com/watch?v=SbqXqQ-2ixs>), watch a short video to understand the computer architecture.

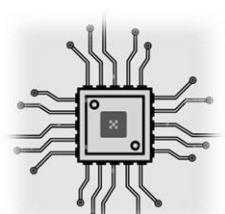
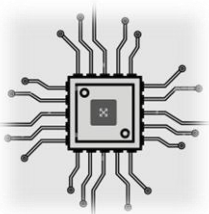


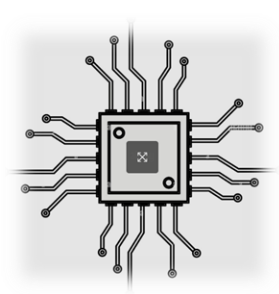
Using your phone, scan the QR code or the link provided (<https://www.youtube.com/watch?v=gl-qXk7XojA>), watch a short video to understand Boolean logic.



Task Three: Computer Architecture Quiz

1. What is the primary function of the CPU?
 - A) To store data
 - B) To perform calculations and execute instructions
 - C) To manage input/output operations
 - D) To provide power to the computer





2. **Which of the following is an example of an input device?**
 - A) Monitor
 - B) Keyboard
 - C) Speaker
 - D) Printer

3. **What does RAM stand for?**
 - A) Readily Accessed Memory
 - B) Random Access Memory
 - C) Rapid Action Memory
 - D) Read Access Module

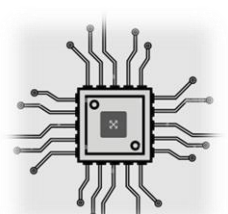
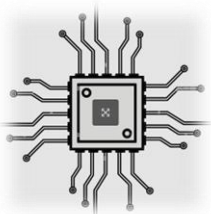
4. **Which of the following is not a component of Von Neumann architecture?**
 - A) Control Unit
 - B) Arithmetic Logic Unit
 - C) Sound Card
 - D) Registers

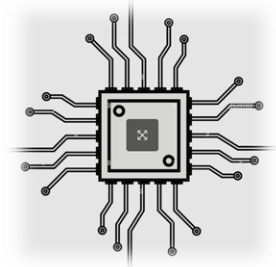
5. **What is the purpose of a router in a network?**
 - A) To store data
 - B) To boost signal strength
 - C) To direct data packets to their destination
 - D) To convert analogue signals to digital

6. **Which of the following best describes the function of a motherboard?**
 - A) It is the main circuit board that connects all components of the computer.
 - B) It is responsible for the computer's video output.
 - C) It stores the operating system.
 - D) It supplies power to the computer.

7. **What is the main difference between ROM and RAM?**
 - A) ROM is volatile, while RAM is non-volatile.
 - B) ROM can be easily upgraded, while RAM cannot.
 - C) ROM stores temporary data, while RAM stores permanent data.
 - D) ROM is used for permanent storage of data, while RAM is temporary.

8. **Which of the following is a characteristic of fibre optic cables?**
 - A) Electrical signals
 - B) Magnetic fields
 - C) Light signals
 - D) Radio waves





9. What is the term for the smallest unit of data in computing?

- A) Byte
- B) Bit
- C) Nibble
- D) Block

10. Which of the following is a benefit of using a mesh network topology?

- A) Reduced redundancy
- B) Easy to add new devices
- C) Centralized management
- D) Lower cost

Task Four: Boolean Logic Activity

Part 1 - Using the Boolean logic discussed in the above learning video, create truth tables for the common logic circuits.

- 1. NOT
- 2. AND
- 3. OR
- 4. XOR

e.g

AND		
INPUT A	INPUT B	OUTPUT
TRUE	TRUE	
TRUE	FALSE	
FALSE	TRUE	
FALSE	FALSE	

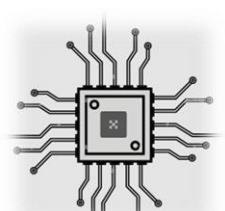
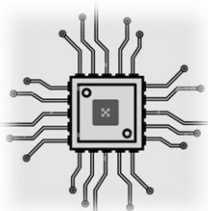
Part 2 – Research and create the truth tables for the logic circuits **NOR** and **NAND**.

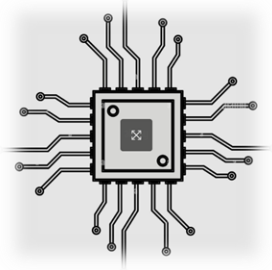
Part 3 – Try to complete the truth table for the below Boolean logic statement.

There are 3 inputs in this statement, that means you have 8 possible combinations instead of 4 but the logic works the same.

(A OR B) AND C

INPUT A	INPUT B	INPUT C	A OR B	(A OR B) AND C
FALSE	FALSE	FALSE		
FALSE	FALSE	TRUE		
FALSE	TRUE	FALSE		
FALSE	TRUE	TRUE		
TRUE	FALSE	FALSE		
TRUE	FALSE	TRUE		
TRUE	TRUE	FALSE		
TRUE	TRUE	FALSE		
TRUE	TRUE	TRUE		



**Task Five: Programming Keywords**

Research and find out what the following words mean. Write your own definitions...

1.	Iteration:
2.	Function:
3.	Selection:
4.	Parameter:
5.	Rogue Value:
6.	Constant:
7.	Local Variable:
8.	Global Variable:

