HOW TO PREPARE FOR CAMBRIDGE TECHNICALS LEVEL 3 IT

Cambridge Technicals IT is a combination between exams and coursework and is split into 5 units.

Unit 1 Fundamentals of IT- understanding how computer systems work

Unit 2 Global Information- how data is stored and used by organisations and individuals

Unit 3 Cyber Security- in-depth knowledge into security systems and how organisations deal with incidents

Unit 8 Project Management- coursework unit where you plan how to manage a practical project

Unit 9 Project Development- coursework unit where you develop you own website project

To prepare for this course complete the tasks below to give you a head-start and a clear understanding of the expectations of this qualification

Challenge 1 – _Unit 1 Fundamentals of IT (Input / Output Devices and Computer Components Inc. Storage)_

For the following tasks you are expected to complete at least 1 A4 page for each term / category:

a) Research Input and Output Devices, giving a definition and purpose of each. Following this, research 6 types of input device (at least 2 "uncommon") 6 types of output device (at least 2 "uncommon"). For each one you need to:
- Explain the term and its purpose in a computer system
- Explain the different types available and why there are different versions
- Explain the advantages and disadvantages of each
- Use appropriate images to support your research

b) Research Computer Components and Storage, giving a definition of each. Following this, research the "CPU" and "Motherboard", 4 types of primary memory (inc. cache) and types of storage (3 offline, 1 online). For each one you need to:
- Explain the terms and its purpose in a computer system (inc. parts that make it up)
- Define location in a computer system, and how it communicates with the rest of the system
- Compare the different types, explaining the similarities and differences between them
- Use appropriate images to support your research

EXTENSION: Continue to research other computer devices and how they work together, such as network hardware and sound and graphic cards.

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Challenge 2 – *Unit 1 Fundamentals of IT (Units of Measure and Number Systems)*

For the following tasks you are expected to complete at least 1 A4 page for each term / category:

a) Research different units of measure used in computer systems; starting at "b" and going up to "YB". You need to explain why the units of measure are grouped in this way For each one you need to:
   - Name the unit (including abbreviation)
   - How does it compare to the previous unit of measure and number of bytes?
   - Relate the unit of measure to components and devices to give it more meaning
   - Explain how the units of measure were developed and their relation to binary (hint: 2^2)

b) Define the term "number systems" and the purpose of different ones. Following this, research "Binary", "Denary" and "Hexadecimal", ensuring you can do/show the following:
   - Method and example to convert Binary to Denary, and Denary to Binary (link)
   - Method and example to convert Hexadecimal to Denary, and Denary to Hexadecimal (link)
   - Method and example to convert Hexadecimal to Binary, and Binary to Hexadecimal
   - Explain the purpose and use of each number system, and why it is used

EXTENSION: Continue to research units of measure and number systems, such as Kibibyte and gibibyte, and octal number system

Challenge 3 – *Unit 2 Global Information (Information Access and formats)*

For the following tasks you are expected to complete at least 1 A4 page for each term / category:

a) Define the term "information access" and the purpose of it. Following this, research "Handheld device", "Portable device", "Fixed device" and "Shared device" regarding computer system. For each one you need to:
   - Explain what is meant by the key term, and the purpose of them (including characteristics)
   - Give an example of the devices covered by this topic
   - Explain the advantages and disadvantages of each (including comparisons)
   - Useful images where appropriate

b) Define the term "information format" and the purpose of different ones. Following this, research 8 internet based information formats i.e. webpages, podcast, social media. For each one you need to:
   - Explain the information format and its purpose
   - Give an example of where it is used and why it is effective
   - Explain the advantages and disadvantages of each (including comparisons)
   - Useful images where appropriate

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EXTENSION: Continue to research information access and formats and how they are ideal for different people / purposes, consider how they are used/needed by individuals compared to organisations

Challenge 4 – *Unit 2 Global Information (The Internet and WWW)*

For the following tasks you are expected to complete at least 1 A4 page for each term / category:

a) Explain the terms "LAN, "WAN" and "The Internet" and the connection between them. Following this, research 8 methods/types (not devices) of accessing the internet (i.e. satellite). For each one you need to:
   - Explain the method and how it works (including characteristics)
   - Give an example of where it is used and why it is effective
   - Explain the advantages and disadvantages of each (including comparisons)
   - Useful images where appropriate

b) Explain the terms "WWW and "The Internet" and the difference between them. Following this, research the 3 types of WWW technology. For each one you need to:
   - Explain the technology and its purpose (including characteristics)
   - Give an example of where it is used and why it is effective
   - Explain the advantages and disadvantages of each (including comparisons)
   - Useful images where appropriate

EXTENSION: Continue to research WWW technologies and the internet and how it impacts communication, such as "cross platform" and "open/closed source"

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