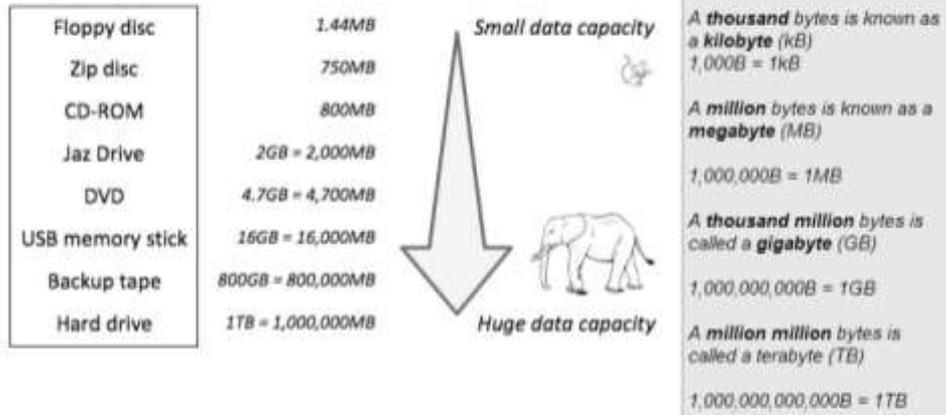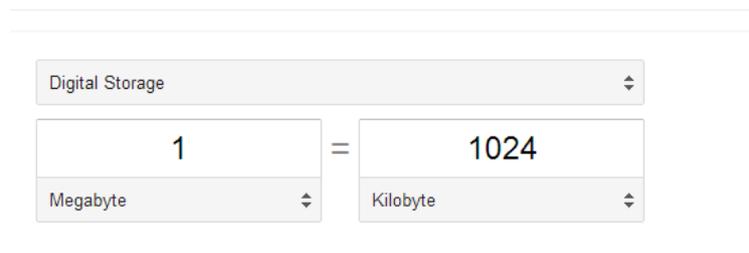# GCSE ICT Mock Exam Revision List

Storage Capacity:

KB (Kilobyte) – MB (Megabyte) – GB (Gigabyte)

Some storage media can only store a very limited amount of data, whilst others can store vast amounts.

Floppy disc	1.44MB	
Zip disc	750MB	
CD-ROM	800MB	
Jaz Drive	2GB = 2,000MB	
DVD	4.7GB = 4,700MB	
USB memory stick	16GB = 16,000MB	
Backup tape	800GB = 800,000MB	
Hard drive	1TB = 1,000,000MB	

Small data capacity

Huge data capacity

Data storage capacity is measured in **bytes** (B).

A **thousand** bytes is known as a **kilobyte** (kB)
1,000B = 1kB

A **million** bytes is known as a **megabyte** (MB)
1,000,000B = 1MB

A **thousand million** bytes is called a **gigabyte** (GB)
1,000,000,000B = 1GB

A **million million** bytes is called a **terabyte** (TB)
1,000,000,000,000B = 1TB

Even a very basic storage devices like a floppy disc can storage over a megabyte of data - that's over 1 million letters or numbers!

KB are smaller than MB and MB are smaller than GB (about a thousandth of the size each time)

Digital Storage

1 = 1024

Megabyte   Kilobyte

Peripheral devices

A peripheral device is a computer device, such as a CD-ROM drive or printer that is not part of the essential computer, i.e., the memory and microprocessor. Peripheral devices can be external -- such as a mouse, keyboard, printer, monitor, external Zip drive or scanner -- or internal, such as a CD-ROM drive, CD-R drive or internal modem. Internal peripheral devices are often referred to as *integrated peripherals.* They might be connected via a cable, or they might be connected wirelessly.

Connecting peripheral devices

You could use cable or wireless connectivity – eg WiFi/Bluetooth
Cables include USB cables, Firewires, SCART leads, Thunderbolt, HDMI leads etc (look these up).

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Resolutions

Screen resolutions, picture resolutions….
The higher the resolution, the better quality the image will be. With images, the higher the resolution, the larger the file size will be. Two measurements are given for resolutions – width x height. Examples are 1280 x 1024, which is a lower resolution than 1980 x 1080

Protecting your data

Backing Up Data

This involves keeping a copy of files in a different location, so they can be restored if the original is lost, damaged etc. Backup files can be kept on a different drive, on a flash drive, on backup tape, stored online, "in the cloud" etc. Some backups are done automatically, so the user does not have to remember to do it. A benefit of online backup is that you can access the files from anywhere that allows internet access and you can have access to unlimited storage.

Confidentiality:

Some data is confidential; not only do you not want to lose it, you don't want others to even view it without authorization. Exposure of your social security number, credit card, and bank account information could subject you to identity theft. Company documents may contain trade secrets, personal information about employees or clients, or the organization's financial records.

Use file-level and share-level security

To keep others out of your data, the first step is to set permissions on the data files and folders. If you have data in network shares, you can set share permissions to control what user accounts can and cannot access the files across the network

In both cases, you can set permissions for either user accounts or groups, and you can allow or deny various levels of access from read-only to full control.

Password-protection

Many applications will allow you to set passwords on individual documents. To open the document, you must enter the password.

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You can set passwords onto your computer/laptop/mobile etc so that others cannot access the device.

Use encryption
This codes the file so that only someone with the same decryption code can access it.

Anti-virus software
Viruses can perform malicious acts on your files – like scrambling them so they are unreadable, deleting them or making copies of them. Installing and updating anti-virus software can protect your files.

Protect from phishing
Phishing is the fraudulent practice of sending emails pretending to be from real companies in order to get individuals to reveal personal information, such as passwords and credit card numbers, online. Delete all emails that seem suspicious.

Firewall

This is hardware or software (or both) that controls incoming and outgoing network traffic by determining whether data is safe or not, based on rules that have been set.

Protecting your details
Often you are required to enter a password when you logon to certain websites, shops and banks. The password checks that the user is really who they say there are. Some sites use drop-down lists for your PIN and date of birth. This helps to protect your details as key-press software (spyware) cannot detect which item you chose from the list and often you only have to show certain characters from your PIN, not all of it. Websites also often display the characters you are selecting as asterisks, instead of the real characters, which prevents people from viewing on the screen what your details are.

Videos and software - downloading

Downloading software versus buying the disk
If you download software you can often get automatic updates and free trials. You don't have bulky packaging lying around and there's no risk of losing or damaging the disk and it is environmentally friendly. On the downside, if you wanted to take the software somewhere else, you wouldn't have a disk to take with you, so would have to take the whole computer, and if you wanted to sell it on, you couldn't. Also, it can take a long time to download some software and, if you don't have a really good internet connection, the download can sometimes fail.

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Streaming video

If a user wants to watch a video they could download the video or they could stream it. If they download it the file will be saved to their computer, which is good if they want to watch it when they are not connected to the internet, but streaming will allow them to watch the video instantly as it is being sent to their device, which would suit them if they had good internet access. One of the benefits of streaming is that it doesn't use up much space on your computer, as you do not download the video to keep it and it is often free to stream videos. Also, you don't have to wait; you can start watching straight away. If you watch a video on YouTube you are streaming.

Buffering

One of the potential downsides of streaming is the problem of buffering – when you have to wait for content to be streamed to your device. There are a number of possible reasons for buffering, but some of them are that you may have more than one programme or device accessing the internet, in which case you should close the other devices or programmes while you are streaming. Another cause could be that you do not have sufficient bandwidth (internet access speed) , in which case you should consider upgrading your package or changing ISP (Internet Service Provider). If you are using WiFi, maybe you have poor signal – try moving closer to the router. Possibly, there are too many users accessing the internet from the same router – either upgrade your connection or change provider to get a better service. Possibly, the problem is with the computer. Maybe you have to upgrade RAM or change the settings on your computer.

Bandwidth

If you want to download a lot, or if you intend to partake in online activities that involve the transfer of a lot of data (eg online gaming), then you need to have good bandwidth and low latency. Bandwidth relates to the amount of data that can be transmitted in a given time (measured in bits per second – bps). The higher the bandwidth, the more data that can be transmitted.

Latency refers to the time is takes the data to travel from its source to its destination (i.e from a website to your device)

> **Bandwidth** – volume of data

> **Latency** – delay to speed of transfer

To get the fastest data transfer speed you need high bandwidth and low latency.

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Mobile Devices

These are often multifunctional, with access to the Internet using 3G, WiFi or other means. Websites often make pages in a different format for mobile devices, so the pages load faster and are designed for a smaller screen. Also, mobile phones often can't show all the content that desktop computers can show, as the technology is different. You can use smart phones to scan QR codes to go straight to websites if the right application is installed and if the phone has a camera.

GPS (Navigation Services)

They often have GPS (Global Positioning Service), so you can use your phone to plan journeys or to help you find your way home. Companies often use GPS to help them with deliveries to customers. This can really help them save time, as the navigation aid helps them to find the best route. It also means they are not having to look at maps, which could be distracting. They can have audio on, so the instructions are spoken and it gives them an estimated arrival time, which can help them with planning and customer service. On the downside, sometimes the satellite signal can be lost and it easy to get so reliant on navigation aids that the driver never learns popular routes. Sat navs can be stolen, so vans and cars are sometimes broken into if the devices are left on show.

Shopping

There are lots of online shops, selling just about everything. You can pay for goods using a credit or debit card if you have one, or through PayPal or via online bank transfer which will take the money from your account and put it into the seller's account. You can even use e-vouchers.

Online shopping has lots of advantages: you don't have to go out or queue at tills, you can use regular sites which save your details so you don't have to enter them again each time (they use *cookies* to do this), you can look at reviews from other people, you can compare prices and you can often track your order. You can store your bookmarks online so that you don't have to remember the website address of the store you used and you can even share the bookmarks with online friends, so they can use the same sites too. Storing bookmarks online in this way is called social bookmarking, which allows others to access your bookmarks if you want them to.

 The benefits to the company of using cookies to store details is that they can store their customer's details and can contact them with special offers and vouchers and they can offer a good service for the user as the user likes the convenience of not having to type in all their details each time. Once a company has tracked the user's buying habits, they can personalise their emails and offers so they only offer deals to the customer that they think of relevant.

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Communication Protocols

Protocols are a set of rules that manufacturers agree to so that computers and devices can communicate with each other. Some of the protocols are: VoIP, IMAP, POP3 and SMTP.

What is Voice over IP?

Voice over Internet Protocol (VoIP) technology lets you use the Internet to make and receive telephone calls.

What is POP3?

Post Office Protocol ve 3 (POP3) is a standard mail protocol used to receive emails from a remote server to a local email client. POP3 allows you to download email messages on your local computer and read them even when you are offline.

What is IMAP?

The Internet Message Access Protocol (IMAP) is a mail protocol used for accessing email on a remote web server from a local client.

Main difference between IMAP and POP3:

The POP3 protocol assumes that there is only one client connected to the mailbox. In contrast, the IMAP protocol allows simultaneous access by multiple clients. IMAP is suitable for you if your mailbox is about to be managed by multiple users.

What is SMTP?

Simple Mail Transfer Protocol (SMTP) is the standard protocol for sending emails across the Internet.

Accessing the Internet – things to be aware of

When using the internet, parents and young people need to be aware of possible dangers. These dangers could include:

Inappropriate content – pages for adults only

Gambling sites which could cause terrible financial problems if a young person accesses them using their parents' debit or credit card

Getting addicted to the internet, to the point where it interferes with their everyday life and takes over to the extent where it is difficult for them to carry on a normal life.

Potential health problems muscle strain/stiffness – often in the back or neck, repetitive strain injury – often in wrists or fingers, eye strain/headaches and reduced fitness levels. You should make sure you use the right kind of adjustable chair, set up the computer so that the monitor is in the right position, take regular breaks, adjust the lighting in the room or the screen brightness and do some physical exercise.

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Time spent online which should be spend on other activities – homework, studying, leisure activities with family and friends

Danger of developing relationships with people who are considered to be inappropriate. Predators can spend many months grooming young people with the intention of causing them harm or having inappropriate relations with them.

Users may accidentally illegally download software, games, movies etc – leading them to break the law and potentially obtaining a criminal record.

Accidentally downloading viruses – Trojans, spyware, malware etc

Possibly becoming a victim or cyberbullying or harassment. They could even become someone who joins in these activities, not realising the possible impact of their actions, as they have been carried out in a 'virtual' world, not the real world.

Putting themselves or their household at risk by giving away too many personal details. This could lead to identity theft or crime – eg a house being burgled when someone posts online that they are away on holiday.

Positive social aspects of being online
There are lots of social networking sites, like Facebook, Twitter, Bebo, Blogster, Pinterest etc and there are specific ones for particular groups, like Mumsnet for mums and Xt3 for Catholics.

Some of the benefits are that people can gain confidence from interacting with other people online, and because social networking—like everything else online—is constantly evolving, people can become more familiar with new and emerging technologies. Many people find support in online communities, which can be very diverse and expose people to many new viewpoints, ideas, and opinions that they may not be familiar with. People can keep in touch with family members that live far away through the use of online social networking and for people with any kind of disability or special need, the internet can be a great 'leveller' allowing them to feel no different to anyone else and allow them to partake socially in situations that they may find difficult to do in other circumstances.

If people feel isolated or unable to leave the house, social networking can allow them the feeling of being part of a community and give them access to other people, which they may not otherwise have and online gaming sites can increase your ability to work with others to solve problems and can improve your leadership skills. Some people really like the competitive nature of playing online with others rather than playing alone.

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Social Networking Sites
These have lots of features, which you may or may not have used. Some of them include:

The ability to be able to add and find friends

Being able to communicate with others in a number of ways (eg messages, posting on walls, sending voice messages and instant messaging, commenting on photos and on their posts

You can upload photos and videos and share these with your friends

You can often play games, alone or with other friends

Social networking sites are normally free to join, but they need to get their money from somewhere, so a common feature of networking sites are the adverts. Often these can geared towards your interests, which makes them a little bit less annoying!

You can usually share interests and join various communities for specific interests (could be which school you went to or which band you support)

Often you can set up who can see your profile and who cannot. Often people do not set up their privacy settings correctly, allowing anyone to look at anything on their account. This is not good practice as it can lead to identify theft, a loss of privacy and the potential threat of being a victim of predatory behaviour or cyber-bullying.

The impact of social networks on society
Impact is about the effect of social networks.

There are positive impacts and negative impacts on a wide range of groups in society – individuals, businesses, organisations etc

Businesses use social networks for advertising and they can personalise the adverts, showing only relevant adverts to relevant people

It is now easy to organise and advertise events with large followings, even on a global scale. These events could be small scale, like organising a birthday parts, to world-wide campaigns to end hunger etc

As it is so easy to connect with people who have similar interests, this can be done for both good and evil…for example, new mums can support each other on social networking sites, but criminals and terrorists can also do this.

People can post reviews on services and goods and others can learn from these reviews. In this way, you can benefit from someone else's knowledge, which can stop you from making a poor choice.

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If you are interested in particular things – maybe you follow a band or have an interest in kick-boxing etc, you can receive updates and feeds about these areas, which will keep you up-to-date and informed.

Media organisations use social networking sites to provide news and details of events, which keeps the user informed without them having to find the news out for themselves.

Criminals can take advantage of the information that users give out about themselves, which can lead to burglary, car theft etc

Schools, colleges, universities can use these sites to connect like-minded students to assist with learning

Some users can find it difficult to separate work and home life – it can bring work into home and home into work.