

## NETWORKS AND ELECTRONIC COMMUNICATION/INTERNET

QUESTION	TYPICAL ANSWER
Features of a typical computer network	<ul style="list-style-type: none"> <li>• Linked set of computer systems</li> <li>• Share data, programs and can send messages between them</li> </ul>
Types of network	<ul style="list-style-type: none"> <li>• LAN (Local Area Network) covers a small area such as a room or building</li> <li>• WAN (Wide Area Network) covers a larger geographical area such as a country eg Internet</li> </ul>
Advantages of LAN	<ul style="list-style-type: none"> <li>• Share data</li> <li>• Share peripherals</li> <li>• Data can be kept secure</li> <li>• Flexible access</li> </ul>
Transmission media for LAN	<ul style="list-style-type: none"> <li>• Cables – copper wire – fibre optic</li> <li>• Wireless – infrared – Bluetooth, WiFi</li> </ul>
Transmission media for WAN	<ul style="list-style-type: none"> <li>• Microwave transmission</li> <li>• Satellite links</li> <li>• Optical fibre</li> </ul>
Network security	<ul style="list-style-type: none"> <li>• Passwords</li> <li>• Encryption (putting data into a code)</li> <li>• Physical methods (like a locked room), use of biometrics eg finger print, retinal scan</li> </ul>
Clients and servers	<ul style="list-style-type: none"> <li>• Clients – desktop computer</li> <li>• Servers <ul style="list-style-type: none"> <li>○ File server</li> <li>○ Print server</li> <li>○ CD-ROM server</li> </ul> </li> </ul>
What does the desktop computer have to have to allow it to communicate with other computers	Network Interface Card
Multi-access	<p>Many users can be on-line to a computer system at the same time eg</p> <ul style="list-style-type: none"> <li>• airline reservations</li> <li>• Police national computer</li> <li>• Automated telling (cashcard) machines</li> </ul>

Teleworking	<p>Using a WAN to work from home rather than an office</p> <p>Advantages for employee are:</p> <ul style="list-style-type: none"> <li>• Choose your own working hours</li> <li>• Save time and money (no travelling)</li> <li>• Reduces pollution and congestion</li> <li>• Organise your family life better</li> </ul> <p>Advantages for employer are:</p> <ul style="list-style-type: none"> <li>• Don't have to provide office space</li> <li>• Don't have to provide canteen facilities</li> </ul>
Social issues	<p>Advantages</p> <ul style="list-style-type: none"> <li>• Improve communications in remote areas</li> <li>• Reduce social isolation (keeping in touch with relatives via the Internet)</li> </ul> <p>Disadvantages</p> <ul style="list-style-type: none"> <li>• Increase social isolation - people can become remote and detached from others</li> <li>• Some cannot afford the cost</li> </ul>
Legal issues	<p>Laws that affect the use of computers:</p> <ul style="list-style-type: none"> <li>• Computer Misuse Act – makes the activities of hacking and distribution of viruses illegal</li> <li>• Copyright, Design and Patents Act – makes unauthorised copying of materials like music and films into a criminal offence</li> <li>• Data Protection Act – sets out the rights of data subjects and the responsibilities of data users</li> </ul>
Ethical issues	<ul style="list-style-type: none"> <li>• What is right or wrong</li> <li>• invasion of personal privacy – data sent across networks may be intercepted by government agencies</li> <li>• Censorship and Freedom of speech – anyone can set up a website, should people who distribute racist material be allowed to? Should a country be able to block access to web sites, which it's government thinks are unsuitable?</li> </ul>

What is electronic communications	The process of sending and receiving electronic messages by: <ul style="list-style-type: none"> <li>o E-mail</li> <li>o Text messaging</li> <li>o File transfer</li> </ul>
What is needed for electronic mail	<ul style="list-style-type: none"> <li>o Access to the internet</li> <li>o An e-mail address</li> <li>o A computer system</li> <li>o Software/internet browser</li> </ul>
What are the advantages of e-mail	<ul style="list-style-type: none"> <li>o Much faster than sending a letter by post, takes seconds to arrive rather than days</li> <li>o You can check e-mail from anywhere in the world</li> <li>o You can send the same e-mail to many people at once</li> </ul>
What are the disadvantages	<ul style="list-style-type: none"> <li>o You must check you inbox regularly</li> <li>o You may get a lot of junk mail</li> <li>o You may get a virus</li> <li>o It is not as secure at the postal system as someone can hack into your e-mail and read them</li> </ul>
What is netiquette?	Netiquette is concerned with the way e-mail messages are written and how others may interpret them.
Rules of netiquette	<ul style="list-style-type: none"> <li>o Keep messages short and to the point</li> <li>o Avoid using CAPITAL letters as this can be seen as shouting</li> <li>o Avoid sending large files as attachments – they make take hours to download</li> </ul>
What is an attachment?	A document which can be attached and sent along with your e-mail this can be a text document, graphic, sound or video file
What type of services are available on the Internet?	There are 3 main services: <ul style="list-style-type: none"> <li>o www – gives access to remote databases</li> <li>o e-mail</li> <li>o file transfer – makes it possible to send and receive large amounts of information</li> </ul>
What is an Internet ready computer?	A computer systems with an internal modem and communications software such as a browser and email program.
Broadband vs Dial-up	Broadband advantage: <ul style="list-style-type: none"> <li>o you can talk on the phone at the same time</li> </ul>

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|--|---|
|  | <ul style="list-style-type: none"><li>o faster to download files than dial-up</li></ul> |
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What is a modem?	A modem is needed at each end of the link to change the digital signal from the computer into an analogue signal that can transmit down the telephone line.
The company uses a wireless network. State two reasons for using wireless networks	<ul style="list-style-type: none"> <li>o No trailing cables</li> <li>o use anywhere within (signal) range</li> <li>o ease of adding equipment.</li> </ul>
Describe one disadvantage of the use of wireless technology.	<ul style="list-style-type: none"> <li>o Security implications</li> <li>o effectiveness of signal strength over larger distances</li> <li>o possible health issues</li> <li>o slower access/download</li> </ul>
a search engine is used to help find information. One of their searches was for Glasgow Cross in 1920. How would you search for this?	<ul style="list-style-type: none"> <li>o "Glasgow Cross" + 1920 (use of quotes around the name and the + sign to ensure that pages found contain both "Glasgow Cross" and 1920)</li> </ul>
The designer used HTML to make the website. What does HTML stand for?	Hypertext Markup Language
State two mobile Internet technologies.	<ul style="list-style-type: none"> <li>o Laptops</li> <li>o Palmtops</li> <li>o Pda</li> <li>o mobile phones</li> <li>o smart phones</li> <li>o <b>Do not put brand names eg Nokia</b></li> </ul>
State two facilities that an ISP may offer	<ul style="list-style-type: none"> <li>o email accounts</li> <li>o services</li> <li>o server space</li> <li>o web hosting</li> <li>o OR</li> <li>o domain name registration</li> <li>o support facilities</li> </ul>