1. LAN and WAN	Topic Name: Networks and Topologies		3. Network Hardware	Key Words
Network A collection of computers connected together.	2	. Client-Server	Hub – used to connect multiple devices to the network. Now obsolete (use Switch)	(highlighted)
Network over a local geographical area (eg School) LAN has its own infrastructure of cabling and network hardware due to distance.	Client-Server The client-server model is the relationship between two computers in which one, the client, makes a service request from another, the server. For example, websites are stored on web servers. A web browser is the client which makes a request to the		Switch – connecting computers and other network capable devices together to form a network.	
Network over a large geographical area (eg WWW) WAN uses external hardware and external infrastructure e.g. use of satellite, phone lines or The Internet. Advantages of Networking			NIC (Network Interface Card/controller) – Internal hardware allows a device to be connected to a network. Use for wired and wireless networks	<u>LINK</u>
Share Internet Connection Share Peripherals Share files Sends Emails	server, and the server s	the server sends the website to the browser. also runs on a client server basis, you log on and	Wireless Access Points – for wireless networks – allows devices to connect to a network wirelessly.	Extended reading
Disadvantages of networking • Risks of Viruses and Hacking • Expensive Hardware • Specialist staff often needed (eg Network Manager)	make a request to acce	Client-server The server controls security of the network.	Server – A computer that holds data to be shared with other computers. A web server stores and shares websites. Servers require server software .	
The Internet	Management	The server manages the network. Needs a dedicated team of people to manage the server. Clients are dependent on the server.	Router- Connects Server to Internet and transmits data (as packets) between networks.	<u>LINK</u>
INTERNET A global network of computers that any computer can join. It is a network between many Networks (ie WAN).	Performance Backups	The server can be upgraded to be made more powerful to cope with high demand. Data is all backed up on the main server.	Transmission Media – What is used to transmit data across a network:	4-8 mark exam questions
World Wide Web (WWW) A collection of websites that are hosted on web servers and accessed through the http protocol.	Paper 1 Computer Sys	rstems	UTP/STP, Ethernet cable (CAT 5e and CAT 6 twisted pair). Coaxial cable , an older standard made of copper	
DNS - Domain Name Server – Holds all the addresses of the web pages and translates the websites domain name in to its IP addresses. Constantly updated by other DNS servers.	5. Peer to Peer		Fibre optic very fast, made of glass, more expensive.	<u>LINK</u>
4. Factors Affecting Performance	Peer To Peer		6. Star and Mesh Topologies	Video links
Factors that affect the performance of Networks: Bandwidth – the amount of data that can be transferred over a given time.	No single provider is re computer stores files a equal responsibility for	esponsible for being the server. Each nd acts as a server. Each computer has providing data.	Mesh Topology Decentralised - Where some or all of the workstations or other devices are connected directly to each of other. Most are usually connected to the node that they exchange the most data	
Greater bandwidth = better network can perform. If more people are using bandwidth on a network this can cause		P2P	with.	<u>LINK</u>
congestion and slow the network down. How to solve: You could limit the bandwidth available to different users	Security	No central control over security.	Star Topology	Povision
on the network address Wired Connections – generally faster and more reliable than	Management	No central control over the network. Anyone can set up.	a switch or server. It is centralised. Central switch or server allows many devices to be connected to it	techniques
Wireless.	Dependency	Clients are not dependent on a central server.		
Wireless performances depends of signal quality – Physical objects such as thick walls and interference from other devices can affect the network.	Performance	If machines on the network are slow they will slow down other machines.	vs vs	
Choice of hardware and network topology can also have an affect on the performance.	Backups	Each computer has to be backed up. Data can easily be deleted by users.	Star Tanalasa	LINK