Using tables to answer questions:

Types of RAM	Advantage	Disadvantage
DRAM – Dynamic RAM Used for Main memory	Cheap to produce	Slow access Needs contents refreshed
SRAM – Static RAM Used for cache memory	Does not need it contents refreshed Will retain its contents as long as the power is on. Much faster access speed than DRAM	Expensive to produce

Lossy	Lossless
Refers to data compression techniques in which some amount of data is lost. Lossy compression technologies attempt to eliminate redundant or unnecessary information. JPEG is an example of lossy	A lossless compression method reduces the size of the image with no lost information. The decompressed image is exactly the same as the original image. No data is discarded. GIF is an example of lossless

Serial	Parallel
• Data transferred using a serial connection sends data bit by bit down a serial line. • Relatively slow • More efficient over a long distant network	• Data being transferred by parallel connection transmit several bits of data simultaneously across a series of parallel channels. • Fast transfer • Only suitable for short distance. (CPU – peripheral)

Bit Mapped	Vector
Represents graphics using pixels. More bits used to represent a pixel the greater the range of colours can be represented. (colour depth) The higher the resolution the better quality of image and higher storage capacity. Bit mapped graphics can be easily edited at pixel level. Problem with resizing of image. Image can become jagged edged. Resolution dependant. Depends on the resolution of the printer and the monitor. Large storage requirements because the whole page of the document is saved.	Vector graphics store the attributes of the shape, for example, fill, line thickness and co-ordinates of where the shape lies on the page. Cannot be edited at pixel level. Only at object level. Smoothed edges when resized. Although vector graphics do not take up as much storage space as bitmapped many objects can be layered and grouped. This can become complex and demand a lot of storage. Resolution independent. Will printout at fixed resolution set by the package.

CD-R	Flash
Cheap to purchase Lightweight and portable	High capacity (many Gb) Lightweight and portable Can be expensive

	Advantage	Disadvantage
Ring	High data transfer (bandwidth) Mechanism to bypass a failed node so a failure of one node will only affect that node	Difficult to designing and extending (complexity of the electronics) A channel failure will disable the entire network Can be expensive because of the complexity.
Mesh	Data can be redirected when some channels are busy or failed. Very robust network. The failure of one node will only affect that node Channel failure will have no effect as alternative channels are available	Extra cabling makes this an expensive Complex cabling leads to higher maintenance of the network.
Star	Easy to extend the network. A failure of one node will only affect that node (unless central node) A channel failure will only affect the outer node on that channel.	The whole network depends on the proper functioning of the central node. Cabling cost is high because each node has its own channel
Bus	Mechanism to bypass a failed node so failure of one node will only affect that node. Easy to add to.	A communication from one node is seen by all the other nodes. A channel failure will cause the whole network to fail.

Client – Server	Peer to Peer
All resources (printer, files and Internet) on the network are controlled by the server. Centralised storage of data Centralised storage of data means regular back-ups can be made from the server. Security is set of easily using a server and client network. Usernames and password are easily given along with access levels for users. Used in businesses (banks) and organisations (schools, colleges, universities.)	No centralised storage. Each workstation stores its data independently. No centralised storage means no back up system. Security is difficult because there is no mechanism for central access. Best suited with a trusting environment. Family home or small office.

Hub	Switch
A hub contains multiple ports. When a packet arrives at one port, it is copied to the other ports so that all segments of the LAN can see all packets. Cheap to purchase and install **Problem -** All devices on the network share the same bandwidth	Will look at traffic it receives and based on the destination address it will direct the traffic to the port. Devices don't share the same bandwidth. The network will not be slowed down. Packet is delivered to address port. **Problem -** Require additional set-up and expensive to purchase.