Networks: Protocols and Routing

A	Protocols	
Ethernet		Used to connect devices in a LAN
WiFi		Used to connect devices wirelessly
Dynamic Host Configuration Protocol	DHCP	System for reusing IP addresses by reassigning unused ones
Media Access Control		For addressing devices permanently, stored in the NIC
File Transfer Protocol	FTP	For sending files over the internet
HyperText Transfer Protocol	HTTP(S)	Protocol for transferring HTML files (HTTPS is with encryption)
Internet Message Access Protocol	IMAP	For email where the client can manage a remote mailbox
Post Office Protocol	POP	For email. An email is deleted from the server as the client retrieves it
Simple Mail Transfer Protocol	SMTP	Protocol for pushing email to a server (now becoming obsolete)
Transmission Control Protocol	TCP	A protocol for splitting packets and reassembling them after transmission, and for checking the data has been correctly delivered
Internet Protocol	IP	Protocol for packet switching
Transmission Control Protocol / Internet Protocol	TCP/IP	The protocol for general use of the internet

B	Routing
Encapsulation	Enclosing data inside another data structure to form a single component
De-encapsulation	Stripping external data from an encapsulated item to extract the original data
Header	Information at the beginning of a packet including IP addresses of sender and receiver, protocol, packet number and length of packet
Packet	A division of data which is to be sent over TCP/IP, including a header and trailer. Created by software
Payload	Data in a packet which is what is meant to be sent
Trailer	Information at the end of a packet including error correction and end of packet marker
Layering	A system of rules, organised into an order in which they are applied
Circuit switching	Method of routing which involves opening a connection between two nodes and sending data in a stream before closing the connection
Packet switching	Method of routing which involves data being divided up into packets and sent in multiple pathways to the destination