

Topic 2: Data Transmission

EAL keyword sheet - Cambridge IGCSE Computer Science 0984. Write the word in your own language in the last column.

Keyword	Meaning	Example sentence	In my language
transmission	Sending data from one device to another.	<i>Data transmission can use cables or wireless signals.</i>	
packet	A small piece of data. Large files are split into packets before sending.	<i>Each packet may take a different route.</i>	
packet switching	A method of sending data as separate packets that can use different routes.	<i>Packet switching is used on the internet.</i>	
header	The start of a packet. It holds the destination address, the packet number and the sender's address.	<i>The header tells the router where to send the packet.</i>	
payload	The actual data inside a packet.	<i>The payload is part of the email.</i>	
trailer	The end of a packet. It shows the packet has finished and can hold error-checking data.	<i>The trailer marks the end of the packet.</i>	
router	A device that sends packets to the correct place on a network.	<i>The router chooses the best route.</i>	
serial transmission	Sending data one bit at a time along one wire.	<i>Serial transmission works well over long distances.</i>	
parallel transmission	Sending several bits at the same time along many wires.	<i>Parallel transmission is fast but only over short distances.</i>	
simplex	Data can travel in one direction only.	<i>A keyboard sending data to a computer is simplex.</i>	
half-duplex	Data can travel in both directions, but not at the same time.	<i>A walkie-talkie is half-duplex.</i>	
full-duplex	Data can travel in both directions at the same time.	<i>A phone call is full-duplex.</i>	
USB (Universal Serial Bus)	A standard connection for attaching devices to a computer.	<i>I plug my mouse into a USB port.</i>	

Keyword	Meaning	Example sentence	In my language
error	A mistake. In transmission, data that has changed by accident.	<i>Interference can cause an error in the data.</i>	
parity check	An error check that counts the number of 1s in a byte. The count must be odd or even.	<i>In even parity, the number of 1s must be even.</i>	
parity bit	An extra bit added to make the number of 1s odd or even.	<i>The parity bit is added to the left of the byte.</i>	
checksum	A value calculated from the data. It is calculated again after sending and the two values are compared.	<i>If the checksums are different, there is an error.</i>	
echo check	The receiver sends the data back to the sender, who compares it with the original.	<i>An echo check can slow down transmission.</i>	
check digit	A number added to the end of a code to help find errors, e.g. in barcodes and ISBNs.	<i>The last number of an ISBN is a check digit.</i>	
ARQ (automatic repeat query)	A method that uses acknowledgements and timeouts. If data has an error, it is sent again.	<i>ARQ asks the sender to resend the packet.</i>	
acknowledgement	A message from the receiver that says the data arrived correctly.	<i>The sender waits for an acknowledgement.</i>	
timeout	The time a sender waits for an acknowledgement before sending again.	<i>After the timeout, the packet is resent.</i>	
encryption	Changing data into a secret code so other people cannot understand it.	<i>Encryption protects data on the internet.</i>	
plaintext	Data before it is encrypted. It can be read by anyone.	<i>The plaintext was 'HELLO'.</i>	
ciphertext	Data after it is encrypted. It cannot be understood.	<i>Only the correct key can change ciphertext back to plaintext.</i>	
key	A secret value used to encrypt or decrypt data.	<i>You need the key to decrypt the message.</i>	
symmetric encryption	Encryption that uses the same key to lock and unlock the data.	<i>In symmetric encryption, both people share one key.</i>	
asymmetric encryption	Encryption that uses two keys: a public key and a private key.	<i>Asymmetric encryption is safer for sharing keys.</i>	

Keyword	Meaning	Example sentence	In my language
public key / private key	The public key can be shared with everyone. The private key must be kept secret.	<i>Anyone can use my public key to send me a message.</i>	