

Cambridge Ordinary Level Notes  
Computer Science 2210

Abrar Faiyaz Rahim, degrees pending

CONTENTS	2
----------	---

## Contents

<b>1 Data transmission</b>	<b>3</b>
1.1 Types and methods of data transmission . . . . .	3

# 1 Data transmission

## 1.1 Types and methods of data transmission

- 1.1.1. (a) *Understand that data is broken down into packets to be transmitted*  
 (b) *Describe the structure of a packet*  
 (c) *Describe the process of packet switching*

A data packet consists of the following:

- Packet header: Consisting of three further pieces of information:
  - Destination address: Address of the recipient of the packet.
  - Packet number: A number used reshuffle the packets back into sequence.
  - Originator's address: Address of the sender.
- Payload: Consisting of the actual data contents of the packet.
- Trailer: Consists of some data required in error checking, and a signal to indicate the ending of the packet.

- 1.1.2. (a) *Describe how data is transmitted from one device to another using different methods of data transmission*  
 (b) *Explain the suitability of each method of data transmission, for a given scenario*

The methods of data transmission can be largely separated into two, based on amount of data transmitted and direction of data being transmitted. Based on amount of data transmission:

- Serial: Data is transmitted *one bit at a time, down a single wire*. Such transmission is time consuming, but safer in that data will always arrive in order and has less chance of being skewed as, due to the fewer amount of wires, there is less chance of interference.
- Parallel: Data is transmitted *multiple bits at a time, down multiple wires*.

Based on direction of data transmission:

- Simplex: Data is transmitted in *only one direction*.
- Half duplex: Data is transmitted in *both directions, but not at the same time*.
- Duplex: Data is transmitted in *both directions at the same time*.