1999 Paper 13 Question 2

Computer Design

What is the difference between serial and parallel data transmission?   [4 marks]

RS232 is a serial communications protocol. Explain how the letter "A" (ASCII code 65 in decimal) is transmitted if one start bit and one stop bit are to be used.
[5 marks]

Parallel data transmission is typically used to communicate with main memory (DRAM). Explain the principal operations involved in reading a burst of consecutive data words from DRAM.   [6 marks]

What is a *cache* and why would it typically wish to read a block of data rather than a single word from the DRAM?   [5 marks]