4 a) Describe four types of processors used in parallel processing.

[4]

b) A hardware designer decided to look into the use of parallel processing. Describe three features of parallel processing she needs to consider when designing her new system.

[3]

c) A computer system uses pipelining. An assembly code program being run has eight instructions. Compare the number of clock cycles required when using pipelining compared to a sequential computer.

[3]

5 a) Four descriptions and four types of computer architecture are shown below.
Draw a line to connect each description to the appropriate type of computer architecture.

[4]

Description	Computer architecture
A computer that does not have the ability for parallel processing.	SIMD
The processor has several ALUs. Each ALU executes the same instructions but on different data.	MISD
There are several processors. Each processor executes different instructions drawn from a common pool. Each processor operates on different data drawn from a common pool.	SISD
There is only one processor executing one set of instructions on a single set of data.	MIMD

b) In a massively parallel computer explain what is meant by:

i) Massive

[1]

ii) Parallel

[1]

c) There are both hardware and software issues that have to be considered for parallel processing to succeed. Describe **one** hardware and **one** software issue.

[4]