3.3.6 Parallel Processing

Oct/NOV 2004

5 (b) (i) Explain what is meant by a parallel processing system. **[1]**

(ii) Give an advantage and a disadvantage of parallel processing as opposed to serial processing. **[2]**

8. (b) Explain the need for parallel architecture when using a computer to forecast the weather. **[3]**

May/June 2005

9. Discuss the need for parallel architecture when processing some simulations. **[4]**

Oct/NOV 2006

1 (b) (i) Explain how a parallel processor system differs from a sequential processor system. **[2]**

(ii) Give an example of an application for which it would be sensible to use parallel processing, justifying your choice. **[2]**

May/June 2007

7. (b) (i) Explain how parallel processing differs from serial processing. **[2]**

(ii) State an application which would use parallel processing, giving a reason for your answer. **[2]**

Oct/NOV 2007

8. (a) Using an example application, explain why some applications require parallel processing rather than serial processing. **[3]**

(b) Describe what is needed to run a parallel process rather than a serial process. **[3]**

Oct/NOV 2008

8. (b) (i) Explain what is meant by a parallel processor system. **[2]**

(ii) State the advantages and disadvantages of using parallel processing for weather forecasting. **[4]**

Oct/NOV 2009. P32

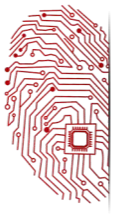
2. Parallel processing is necessary to provide long term weather forecasts. Describe two types of parallel processor that could be used. **[4]**

Oct/NOV 2010. P31/P32

10. A system is set up to simulate the ways in which crystals grow. Each molecule of chemical reacts with all those around it to create the final shape. It is decided to use parallel processing to simulate the growth of the crystals.

(a) (i) Explain what is meant by parallel processing.

(ii) Explain why parallel processing is used in this simulation. **[4]**



3.3.6 Parallel Processing

(b) Give one disadvantage of using parallel processing in this simulation. **[1]**

Oct/NOV 2010. P33

10. A computer system is used to produce weather forecasts each day in time for the evening television news broadcast. The system uses parallel processing to produce the forecasts.

(a) Explain what is meant by parallel processing. **[1]**

(b) Explain why parallel processing is used to create the weather forecasts. **[4]**

Computer Science (9608)

Oct/Nov 2015.P32

4 (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.

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 instruction 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

[4]

(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. **[4]**