**Activity 15A**

1.a) Describe why RISC is an important development in processor technology.

b) Describe the main differences between RISC and CISC technologies.

2.a) What is meant by the Von Neumann bottleneck?

b) How does the Von Neumann bottleneck impact on processor performance?

3.a) What are the main differences between cluster computers and massively parallel computers?

3.b) Describe one application which uses massively parallel computers. Justify your choice of answer.

4) A processor uses pipelining. The following instructions are to be input:

1. LOAD A
2. LOAD B
3. LOAD C
4. ADD A,B,C
5. STORE D
6. OUT D

Draw a diagram to show how many clock cycles are needed for these six instructions to be carried out. Compare your answer to the number of clock cycles needed for a processor using sequential processing.