1. a) A low-cost von Neumann machine has an address bus of 16 bits. In this computer,   
a unit of addressable memory is two bytes. How many **KiB** of addressable   
memory can be used? [1]

b) (i) Explain the basic difference between von Neumann architecture and Harvard architecture. [2]

(ii) Why is Harvard architecture potentially able to achieve higher processing speeds than von Neumann architecture? [1]

(iii) Give a typical use of each type of architecture. [2]

2. Compare the features of a Reduced Instruction Set Computer (RISC) architecture with that of Complex Instruction Set Computer (CISC) architecture, stating **one** advantage of each. [6]

3. Describe briefly the features of a Graphics Processing Unit (GPU), stating why it is particularly suitable for image processing. [3]

[Total 15 marks]