Name: Class: Mark:

1. An assembly program contains the following instruction:

MOV ACC, 053

This instruction moves the value in memory address 053 into a register.

(a) State the opcode in this instruction. [1]

(b) State the name of the register used in this instruction. [1]

(c) Name the **two** operands used in this instruction. [2]

(d) When the instruction is executed, describe the stages, CPU components and registers that are involved in executing the instruction on the CPU. [6]

2. A child’s plastic drum kit toy contains an embedded system.

(a) Explain what is meant by an ‘embedded system’. [2]

(b) Embedded systems are used as part of security systems. Explain why most home security alarms make use of embedded systems. [3]

[Total 15 marks]