

## Garde 12 Main Tutorial

### Question 1

- (a) Describe **two** differences between RAM and ROM. [2]
- (b) State **three** differences between Static RAM (SRAM) and Dynamic RAM (DRAM). [3]

### Question 2

- (a) Explain why a computer needs an operating system. [2]
- (b) Give **two** key management tasks carried out by an operating system. [2]
- (c) New program code is to be written in a high-level language. The use of Dynamic Link Library (DLL) files is considered in the design.
- (i) Describe what is meant by a DLL file. [2]
  - (ii) Describe **two** benefits of using DLL files. [4]
  - (iii) State **one** drawback of using DLL files. [2]

### Question 3

- (a)
- (i) Convert the hexadecimal number 7F into denary. [1]
  - (ii) Convert the denary number 291 into hexadecimal [1]
  - (iii) Why do computer scientists often write binary numbers in hexadecimal? [1]
- (b)
- (i) Convert the following denary integer into 8-bit two's complement.  
-102 [2]
  - (ii) Convert the following denary number into Binary Coded Decimal (BCD).  
82 [1]
  - (iii) Convert the following two's complement integer number into denary.  
11001011 [1]

(c) The diagram shows a program loaded into main memory starting at memory address 40 Hex.

**Main memory**  
(Contents shown in Hex.)

Address	Hex.
40	7324
41	A351
42	A552
43	FFFF
⋮	
68	003C
69	103C
6A	010B

How many bytes are used to store each program instruction? [1]

**Question 4**

A cinema allows its customers to buy tickets from an automatic dispensing machine. Payment can be made either with cash, or by debit or credit card. State **two** input and **two** output devices that would be needed and give reasons for your choice of device. [8]

**Question 5**

Four types of storage, labelled A, B, C, D are shown in the table below. (a) Four types of memory, media or devices are shown in the first column. Copy the table and put a tick (✓) in the appropriate column A, B, C or D to indicate the type of storage to which it belongs. You should only put one tick(✓) in each column.

	A	B	C	D
	primary memory storage	magnetic secondary storage	optical secondary storage	solid state secondary storage
DVD-RAM				
ROM				
hard disk				
flash memory				

[4]

