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 RA (DRAM). | AM [3] |
| 30 | |
| 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 Dynamic Link Library (DLL) files is considered in the design. (i) Describe what is meant by a DLL file. (ii) Describe two benefits of using DLL files. (iii) State one drawback of using DLL files. | of [2] [4] [2] |
| Question 3 (a) | |
| (i) Convert the hexadecimal number 7F into denary.(ii) Convert the denary number 291 into hexadecimal(iii) Why do computer scientists often write binary numbers in | [1] [1] |
| hexadecimal? | [1] |
| (b) | |
| (i) Convert the following denary integer into 8-bit two's complement. | [2] |
| -102 (ii) Convert the following denary number into Binary Coded Decimal | [2] |
| (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.

| Address | Main memory (Contents shown in 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 (\checkmark) 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(\checkmark) in each column.

| | Α | В | С | D |
|--------------|------------------------------|----------------------------------|---------------------------------|-------------------------------------|
| | primary memory storage | magnetic secondary storage | optical secondary storage | solid state secondary storage |
| DVD-RAM | | | | |
| ROM | | | | |
| hard disk | | | | |
| flash memory | | | | |

| (b) For the following appli | cations, sta | te which of the fo | our types of storage | • |
|-----------------------------|------------------|----------------------|----------------------|-----|
| A, B, C or D is the n | nost approp | oriate. | | |
| Use each type of stora | ge once or | nly. Indicate your a | answer by selecting | A, |
| B, C or D. | | | | |
| (i) to store the BIOS | | | | |
| A B | C | D | | [1] |
| (ii) to store the operati | ng system | and applications se | oftware | |
| A B | C | D | | [1] |
| (iii) to allow simultaneous | ous recordi | ng and playback by | y a video recorder | |
| with removable me | edia | | , 202 | |
| A B | C | D | 1/16,0 | [1] |
| | | | | |
| (c) State one benefit and o | ne drawba | ck of using flash | memory. | [2] |
| | | | | |

Question 6

Utility software is usually pre-installed on a new computer.

(a) The following table lists four programs. Copy the table and put one tick

 (\checkmark) in each row to indicate whether or not the program is utility software.

| Program | True | False |
|-----------------|------|-------|
| Database | | |
| Virus checker | | |
| Web browser | | |
| Backup software | | |

[4]

(b) Name two other utility programs.

[2]