ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Advanced Level

COMPUTING 9195/2

PAPER 2

NOVEMBER 2009 SESSION 3 hours

Additional materials:
Answer paper

TIME 3 hours

INSTRUCTIONS TO CANDIDATES

Write your name, Centre number and candidate number in the spaces provided on the answer paper/answer booklet.

Answer **all** questions.

Write your answers on the separate answer paper provided.

If you use more than one sheet of paper, fasten the sheets together.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets [ ] at the end of each question or part question.

You are reminded of the need for good English and clear presentation in your answers.

This question paper consists of 5 printed pages and 3 blank pages.

[Turn over

1 **(a)** Explain why the main memory is usually referred to as random access memory (RAM). [1]

(b) State the importance of read only memory (ROM). [1]

2 **(a)** State why employee number and stock number are often chosen as primary keys to employee and stock records rather than employee name or stock description. [2]

(b) Describe **one** major danger of having many separate file systems that contain common data. [1]

3 Explain **two** possible problems which are encountered in transferring data between **two** different computers running on different operating systems. [4]

4 When data is being sent to a printer, an interrupt may occur.

(a) State **two** reasons why an interrupt might occur in this case. [2]

(b) Interrupts can be given priorities. Give **two** examples of interrupts which are likely to have higher priorities than an interrupt from the printer. [2]

5 When deciding which file structure to use for a particular application, one must choose between fixed length and variable length records.

(a) State

(i) **two** advantages, and

(ii) **one** disadvantage of using variable length records. [3]

(b) Describe **one** example when it would be more appropriate to use a variable length record. [2]

6 **(i)** Convert the following expressions into Reverse Polish (post fix) expressions.

(a) a*c + (b – d) *e [2]

(b) (m+ n/p)/ (q – r) [2]

(ii) Convert the following Reverse Polish into infix form.

ab + cd -* af/* [2]

7 **(a)** Describe **two** properties of each of the following types of languages.

(i) declarative

(ii) imperative [4]

(b) Give an example of each type of language in **(a)**. [2]

(c) Explain why declarative languages are more popularly used by programmers. [1]

8 Describe each of the following components in the Memory Unit:

(a) memory address register

(b) address decoder

(c) main store

(d) memory data register

[8]

9 **(a)** Describe the following terms of addressing:

(i) immediate

(ii) direct

(iii) indirect

(iv) indexed

(v) relative

[5]

(b) State the purpose served by the following registers.

(i) memory buffer

(ii) status [4]

10 (a) High level languages have many facilities not found in low level languages.

Identify **three** facilities. [3]

(b) (i) Distinguish *iteration* and *recursion* giving an example of each. [4]

(ii) State **two** disadvantages of using recursive routines. [2]

11 (a) A rural hospital intends to network all their computers which are in wards and administration block. Briefly highlight **two** advantages of networking the hospital using

(i) star topology,

(ii) ring topology,

(iii) bus topology.

[6]

(b) How would networking of the hospital help the following:

(i) admission clerk,

(ii) hospital doctor on duty,

(iii) information desk,

(iv) hospital canteen.

[4]

12 (a) Explain the following terms:

(i) spooling

(ii) polling

(iii) interrupt [6]

(b) The primary storage of a computer consists of Random Access Memory and Read Only Memory.

(i) Distinguish between the two types of memory. [2]

(ii) Explain **one** use of each of the two memory types for a desktop computer used in the school secretary's office. [2]

13 **(a)** Differentiate a linked list and an array. [4]

(b) Describe the following tree traversal methods:

(i) inorder

(ii) preorder [6]

(c) Outline the importance of performing an inorder traversal on a binary tree. [1]

14 Explain the following terms:

(a) control unit

(b) accumulator

(c) memory data register

(d) CIR

(e) internal bus

(f) memory address register

[12]