ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Advanced Level

COMPUTING 9195/2

PAPER 2

NOVEMBER 2014 SESSION 3 hours

Additional materials:
Answer paper
Non-programmable calculator

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 in Section A and any **two** questions from Section B.

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 4 printed pages.

[Turn over

SECTION A

Answer **all** questions in this section.

1 **(a)** Define the terms:

(i) *Identifier*

(ii) *Constant*

(iii) *Variable*

[3]

(b) Explain the term *boolean decision*. Give an example. [2]

2 Explain the purpose of the following lines of code in the program.

```
Dim   a      As single
Dim   b      As single
Dim   sum    As single
Dim   diff   As single
a = Input Box ("Number1", "enter the first number"), " "
b = Input Box ("Number 2", "enter the second number"), " "
sum = a + b
diff = a – b
PicResult.cls
PicResult.Print ("sum is"), sum
PicResult.Print ("difference is"), diff
```

[11]

3 Design a Visual Basic Program which will accept the Principal, Interest Rate and Time using textboxes. The programme is supposed to compute the Interest and present the Future Value based on simple Interest on a picture box. Names and captions are required for controls.

$$\left(I = \frac{PRT}{100}\right)$$

[18]

4 Design a Visual Basic Program which will accept a value of temperature in Degree Fehreinheit in a textbox and computes the equivalent in degrees celcius. The result will be displayed in a textbox. Names for your controls are required.

$C = 5(F - 32)/9$ [10]

5 Explain each of the control structures:

(i) selection

(ii) sequence

(iii) repetition

[6]

SECTION B

Answer any **two** questions in this section.

6 **(a)** Suggest any **two** reasons why software projects require documentation. [2]

(b) State any **three** documents associated with software projects. [3]

(c) State any **two** changeover/conversion method at system implementation stage. [2]

(d) Draw a program flowchart to input positive and negative numbers whose range is between –400 and +400 inclusive. Your solution should output how many positive, negative and zero numbers are in the list.

Use –999 as a rogue value. [18]

7 **(a)** Explain the following terms as they are used in Databases.

(i) *Database Management System*

(ii) *data description/identification language*

(iii) *data manipulation language*

[6]

(b) Explain the terms

(i) record,

(ii) field,

(iii) character.

[3]

(c) Explain with examples the difference between data integrity and data security. [4]

(d) A college library keeps details of books in a single file on a computer. There are 10 000 books in the library.

Estimate the size of the file given that the following fields are stored for each book:

(i) ISBN

(ii) Title of book

(iii) publisher

(iv) year published

(v) author(s)

(vi) page number in the catalogue

[6]

(e) Draw an entity relationship diagram to illustrate the relationship between

(i) doctor and patient,

(ii) ward and patient,

(iii) album and singers,

(iv) school and pupils,

(v) father and children,

(vi) teacher and student. [6]

8 **(a)** Define the terms:

(i) *byte*,

(ii) *word*,

(iii) *bit*,

(iv) *nibble*,

(iv) *ASCII*. [5]

(b) Explain how to convert binary to hexadecimal numbers.

Give an example. [4]

(c) Covert 39 to

(i) binary, [1]

(ii) BCD, [2]

(iii) hexadecimal, [2]

(iv) octal. [2]

(d) Evaluate

(i) Work out $1011_2 + 1111_2$ [1]

(ii) $2BC_{16} + B4_{16}$ [3]

(iii) AOB * 39 [2]

(iv) $A7\overline{)7C115}$ [3]