ZIMBABWE SCHOOL EXAMINATIONS COUNCIL
General Certificate of Education Advanced Level

COMPUTING
PAPER 2

9195/2

NOVEMBER 2015 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 in Section A and any two in 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.

Section A

Answer **all** questions in this section.

1   **(a)**   **(i)**   Explain the term *Visual Basic Event*.

              (ii)   Give **two** examples of a Visual Basic Event.   [4]

     (b)   List any **five** data types in Visual Basic.   [5]

     (c)   Explain any **two** differences between a constant and a variable.   [4]

2   **(a)**   List any **four** rules used in naming a variable.   [4]

     (b)   Name **three** primary steps involved in building a Visual Basic Project.   [3]

3   The Visual Basic code is supposed to compute the factorial of any given number. The number is accepted using a textbox named txtNum and the factorial is displayed in a text box named txtFact. Identify the errors or missing VB statements in the following code.

```
Private Fact-click( )
txtFact = 1
For i =1 to txtNum
txtFact = txtFact +i
End sub
```
                                                 [4]

4   DP Repairs offer repair series at a rate of \$20 per hour for labour. Costs of supplies are subject to 15 % sales tax.

     (a)   Design a Visual Basic form which presents the bill for the situation. The customer's name, labour hours and the cost of supplies are to be captured using textboxes. Clicking of a command should trigger the display of the client name and the costs (labour cost, supplies' cost and total cost). Names for controls are required. The display should be a picture box.   [8]

     (b)   Using the situation given in **(a)** above, write a code that will calculate the total cost, labour cost, supplies cost and display the client name, labour cost, supplies cost and the total cost.   [10]

5   Write a Visual Basic code which will classify any mark captured in a textbox named txtMark according to the following grades

                         A   -   70 – 100
                         B   -   60 – 69
                         C   -   50 – 59
                         D   -   40 – 49
                         E   -   30 – 39
                         U   -   0 – 29

The grades should be displayed on a label named display. Make use of CASE STATEMENTS.   [8]

Section B

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

6 **(a)** Explain the **four** basic aspects of the design stage in system analysis. [4]

(b) Give **three** reasons why maintenance of a system is necessary. [3]

(c) You have been hired by an organisation to develop a Management Information System.

    (i) Illustrate the approach you would take to ensure that you develop a system that meets the client's specifications.

    (ii) Give an explanation for each of the components in the approach to the development of the Management Information System.

[18]

7 **(a)** A mail order company has a multi-user centralised database to allow employees to access orders and deal with customer enquiries as they come in to the customer service department.

    (i) Explain why different staff will have passwords allowing them different levels of access to the data stored. [2]

    (ii) Give **two** other reasons why passwords would be used for this type of system. [2]

(b) A record within the main stock file is locked whenever one person is making changes to it.

    (i) Explain the term 'locked'.

    (ii) Explain why it is necessary in this case to lock records.

[3]

(c) A stock master file is updated by a transaction file using sequential file access. The purpose of the stock master file is to ensure that the levels of stock will meet demand.

    (i) Give **four** essential fields for the stock master file.

    (ii) Give **three** essential fields for the transaction file.

    (iii) Explain why the transaction file should be sorted and in what order, prior to updating the master file.

[10]

[Turn over

(d)   Convert 27 into

       (i)   binary,

       (ii)   BCD,

                                                                                [3]

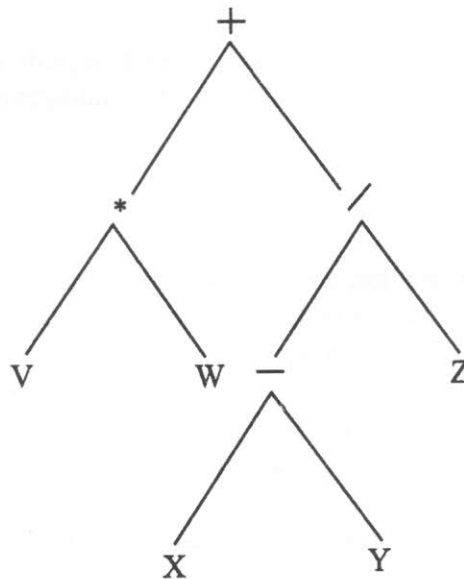(e)   Convert ABC_{16} to decimal.   [2]

(d) A student on work experience at Salary Service Bureau (SSB) was alone in the office. The student logged into the computer system by guessing the administrator's user I.D. and password. The student then accessed the company's pay roll file and changed the gross pay of several employees.

(i) State the **two** offences the student committed.

(ii) Explain any **three** methods of security the company could have used to prevent the offences.

[8]

8 An algebraic expression is represented by the following binary tree.

(a) Show the output if the tree is traversed using

(i) Post-order,

(ii) In-order,

(iii) Pre-order.

[12]

(b) **(i)** Show how the decimal numbers 13 and 32 would be represented as 8-bit binary integers.

(ii) Given that the ASC11 Code for the character 1 is 110001, show how the test string '1332' would be held in a 4-byte word.

[5]

(c) The sum of $3.39 + 0.678$ is to be worked out using only 3 significant figures.

Find the **actual** and **relative** errors if truncation is used.

[3]