

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate of Education Examination

JUNE 2012

ORDINARY LEVEL

Subject Title	COMPUTER SCIENCE
Paper No.	Paper 2
Subject Code No.	595

TWO HOURS

Answer any FIVE questions.

All questions carry 20 marks each. For your guidance, the approximate mark for each part of a question is indicated in brackets.

You are reminded of the necessity for good English and orderly presentation in your answers.

In calculations, you are advised to show all the steps in your working, giving your answer at each stage.

Calculators are NOT allowed.

Turn over

1. (a) Explain briefly the following computing terms:
- | | | |
|-----------------------|-------------|-----------------|
| (i) Track, | (ii) Sector | (iii) Softcopy |
| (iv) Utility programs | (v) Debug | (vi) Flow chart |
- (b) Briefly describe the impacts (positive and negative) of computerised information systems on:
- (i) Employment (12 marks)
- (ii) Crime (6 marks)
- (c) What is the difference between data and information? (2 marks)

2. (a) State any two security-related disadvantages of computer networks. (2 marks)

(b) When Nancy Vicks tries to log into her company's computer system, the following information is displayed after she types her user name and password.

User Name	vnancy
Password	*****

- (i) Explain why the system allows the user name to be visible, but not the password. (2 marks)
- (ii) Explain how the system uses the user name and password to determine whether or not Nancy should be given access to the company's computer system. (2 marks)
- (iii) Explain two guidelines for choosing and/or using good passwords. (4 marks)
- (c) State the meanings of the following software categorisations: (6 marks)
- (i) Bespoke software
- (ii) Software suite
- (iii) Application software
- (d) (i) State two functions of an operating system. (2 marks)
- (ii) Give two examples of operating systems commonly in use today. (2 marks)

3. (a) What is an algorithm? List four characteristics of algorithms. (6 marks)

(b) The algorithm in Figure 1 is designed to determine the average weight of two rabbits.

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1 Start
2 Get weights of first and second rabbits, W1, W2
3 If W1 < 0 OR W2 < 0
4     Display weight cannot be Negative
5 Else
6     Average = (W1 + W2) / 2
7     Display W1, W2, Average
8 End
    
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Figure 1

- (i) How many control structures are used in the algorithm? Name them and identify their line numbers. (5 marks)
- (ii) Use a flow chart to represent the algorithm given in Figure 1. (7 marks)
- (iii) What is the difference between an algorithm and a program? (2 marks)

4. (a) State the function of each of the following components of a CPU:
- (i) Control Unit (2 marks)
 - (ii) CPU Register (2 marks)
- (b) (i) What is e-commerce? (2 marks)
- (ii) State two advantages and two disadvantages of e-commerce. (4 marks)
- (c) State the meaning of each of the following computer-related terms:
- (i) Bit (4 marks)
 - (ii) Byte
 - (iii) Database
 - (iv) File
- (d) Evaluate the following binary arithmetic expressions:
- (i) $11001011_2 + 1011001_2$ (4 marks)
 - (ii) $10100110_2 - 1100101_2$
- (e) A DVD of capacity 2.5 GB contains data. What is the smallest number of compact disks of capacity 800 MB that is required to hold the data? (4 marks)
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5. (a) What is the difference between real time processing and batch processing. (3 marks)
- (b) Briefly explain 3 principal features of each of the following application software types:
- (i) Computer Aided Design software
 - (ii) Database software
 - (iii) Give an example of each of the software types above. (8 marks)
- (c) Briefly explain the following terms, giving an example in each case.
- (i) Low level programming language
 - (ii) High level programming language
 - (iii) Text editor (9 marks)
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6. (a) Write the full meaning of the acronym ASCII. What are ASCII codes used for? (3 marks)
- The ASCII code for letter B is 66_{10} . Calculate the binary 8-bit representation of letter A. (4 marks)
- (b) (i) What is the difference between serial and parallel methods of data transmission. Give an example in each case. (4 marks)
- (ii) Given two computers in two towns that need to communicate with each other, what transmission method (serial or parallel) would you choose? Explain your answer. (3 marks)
- (c) You are provided with four computers labeled A, B, C, D, a network server S, and a Printer P. Using the letters A, B, C, D, S and P to represent the devices, sketch a possible connection of these devices in each of the following topologies:
- (i) Ring topology
 - (ii) Star topology
 - (iii) Bus topology (6 marks)
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7. (a) What do you understand by the following features of application software:

- (i) Cropping of pictures
- (ii) Resizing of graphics
- (iii) Editing in word processing

(6 marks)

(b) Define the following terms as used in project management:

- (i) Slack time
- (ii) Critical path
- (iii) Lag

(6 marks)

(c) Briefly explain two activities in each of the following phases in an Information System Development Life Cycle:

- (i) Analysis
- (ii) Design
- (iii) Implementation
- (iv) Testing

(8 marks)
