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(Candidate Random CODE): ►

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD
ADVANCED LEVEL EXAMINATION

SUBJECT TITLE INFORMATION & COMMUNICATION TECHNOLOGIES	SUBJECT CODE **0796**	PAPER NUMBER **3**

EXAMINATION DATE: JUNE 2016

THREE HOURS

Enter the information required in the shaded boxes.

Do not write in pencil.

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

Your results must be recorded in the spaces provided in this question booklet. Candidates must allow for themselves enough time to complete and check their work where these are required.

The supervisor will guide you on how to save your files but usually you will be expected to save all your work in one folder named **Candidate folder** *that will be created in your desktop.*

When an imperative programming language is require to write program code, either **Standard |ISO|** *Pascal or* **|ANSI|** *C programming language may be used.*

You should ensure all your work is collected and printed before leaving the examination room. All printed work should be inserted in this booklet and well stapled.

CAREFULLY HANDLE ALL EQUIPMENT PUT AT YOUR DISPOSAL to avoid accidents that may lead to a disaster or system failure. Report any case of system or device malfunction to your supervisor.

Answer ALL TASKS.

--- *TURN OVER*

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Task A (Spreadsheet: 19 marks)

This task will require the use of spreadsheet to calculate profit made by six women who buy food stuff from a bush market and resell in town.
The data collected for a given transaction is found in a workbook named Buy-am-Sell-am found in the *Candidate folder*.

Open the Buy-am-Sell-am workbook.
The price per basin/bunch of each food item is given in red in the shaded cells. These cells contain comments which are made readable by pointing to it.

a) Merge the cells of the first row (containing the header PURCHASE) in the range A1:F1.   **(1 mark)**

b) Type a formula in F4 to calculate the total amount MA ELIZA spends in buying all the food items. Your formula should use absolute reference.
    Write down the formula you have entered in F4 in the space below   **(3 marks)**

    ....

c) Copy the formula in F4 to the the cells from F5 to F9 and also write a formula to calculate the total amount spent by all the three women in F10. Write down the formula in F10 in the space below.

    ....   **(1 mark)**

d) Type a formula to calculate the maximum and minimum number under each of the field names in the table for purchase. Copy both formulas through column B to column F.

    Write down the formula contain in the cells given below.

    B11: ....

    E12: ....   **(4 marks)**

Also calculate the total selling price in F24. Write down the formula you have typed in F19 in the line below.

.... **(2 mark)**

f) Use formula to calculate the profit made by each woman in the SALES table.
   (NB: Profit is the difference between the Sales Price and the Buying Price)
   Write down the formula to calculate the profit of MA BRIDGET in the space below.

.... **(2 marks)**

g) Calculate using formula the percentage gain of each woman.
   % Profit is (Profit ÷ Buying Price)*100. The result is rounded to 2 decimal places.
   Write down the formula to calculate the % Profit of MA MARINETTE in the line below.

.... **(4 marks)**

h) Calculate the Total Selling Price, Profit and Total %Profit (See row 24).   **(2 mark)**

Print the table.

Task B (Programming: 14 Marks)

You will be expected to convert a pseudo code to a flowchart diagram. The program to implement the pseudo code is given in C and in Pascal. You will have to type and run **one of the** codes using either C or Pascal compiler and record the final result of the output.

Problem description:
The problem solved by the code is to bill customers of an electricity power supply company. The company intends to favour the less privileged customers more than the privileged. A less privileged customer is one who consumes less than 100 units while those who consume 100 units and above are privileged. The less privileged pays 50 CFA F per unit while the privileged pays 125 CFA F per unit.

The Algorithm used for the problem above is given below.

```
Start
Give the units consumed by the customer, U
If U<100 then
        Get the unit charge for the less privilege, Charge
  Else
        Get the unit charge for the privileged, Charge
EndIF
Calculate Bill=U*Charge.
Print "Bill".
Stop.
```

a) Convert the pseudocode above to a flow chart in the space below. **(5 marks)**

b) Type **one** of the codes in **Table 1** below using an appropriate compiler environment.
    (Save the Pascal code as *Billing2.pas*; save the C Code as *Billing2.c*).

Compile the code and ensure that there is no typing error. **(2 marks)**

State the name of the compiler you have used ....

Run the code and make the following inputs
        Give the units consumed by the customer: 135
        Give the unit charge for the privileged: 125

Write down the final result of the output: .... **(3 marks)**

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Table 1

Pascal Code	C Code

Program Billing;
VAR
  Bill, U, Charge: integer;
 	
begin
writeln('Give the units consumed by the customer: ');
readln(U);
 	
if U<100 then
begin
Writeln('Give the unit charge for less privileged');
readln(Charge)
     end
   Else
    begin
Writeln('Give the unit charge for the privileged');
readln(Charge)
     end;
 	
   Bill:=U*Charge;
writeln('The Bill= ',Bill);
readln;
end.
	#include <stdio.h>
	int main()
	{
	int Bill, U, Charge;
	
	printf("Give the units consumed by the customer: \n");
	scanf("%d",&U);
	
	  if (U<100)
	  {
	printf("Give the unit charge for the less privileged\n");
	scanf("%d",&Charge);
	  }
	  else
	  {
	printf("Give the unit charge for the privileged\n");
	scanf("%d",&Charge);
	  }
	
	  Bill=U*Charge;
	printf("The Bill is %d",Bill);
	getch();
	  return 0;
	}

Note: Those using Turbo Pascal for Windows compiler will replace the first two lines of the Pascal code with the following three lines.

      Program Billing;
      Uses wincrt;
      VAR

c) Write in the lines below two statements that will request for the name of the customer in the program. (Don't add this to the program).

....

....

....

....   **(4 marks)**

Print the code.

Task C (Database: 18 Marks)

This task is based on data for supplies of some products made to customers in a city by some traders. You will be expected to extract information from **Table 2** to implement a database to hold information about supplies made to these customers.

Table 2

CustomerID	CusName	CusSurname	ProductName	Quantity	UnitPrice	TraderName
1	Luma	Sam	Salt	4	2800	Takang
			Savon	4	10000	Sona
			Sugar	12	6000	Beatrice
2	Gobina	Joshua	Flour	7	18000	Batang
3	Mabu	Mortha	Salt	3	2800	Takang
			Sugar	20	6000	Beatrice
			Zinc	5	3400	Muluh
			Savon	5	10000	Sona

a) Create three tables following the structures given below. The structure is given using the format Table_Name(*PrimaryKey**,FieldName, FieldName,…).

      Customer(*CustomerID**, CusName, CusSurname)

      Supplies(CustomerID, ProductName, Quantity)

      Product(*ProductName**, UnitPrice, TraderName)

Represent the three tables in the space below taking values from **Table 2** above.   **(6 marks)**

....
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b) Create a database named **Shopping** and save it in the Candidate folder.   **(1 mark)**

c) Define each table properties in the space below showing the field name and the data type for each field name.

(3 marks)

Customer table

Field name	Data type

Supplies table

Field name	Data type

Product table

Field name	Data type

d) Create the three tables derived above in your database.
Populate each of the tables created in the database with the data derived from your tables in (a) above.

(3 marks)

e) Create a relationship between the three tables. Draw the relationship diagram in the space below indicating the table names and the keys that relate the tables.

....
....
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....
....   **(2 marks)**

f) By making a query, list all the customers who were supplied Salt and/or Sugar and the quantity that were supplied. Your query should also show the price for each product. Save the query as *Supplies2*.   **(3 marks)**

Print the query.
Print the Customer table