

**CSC&CSM – Algorithm and  
Programming**

**T040**

**Thursday, 23/11/2017**

**08:30 – 11:30 AM**

**WORKFORCE DEVELOPMENT AUTHORITY**



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**ADVANCED LEVEL NATIONAL EXAMINATIONS, 2017,  
TECHNICAL AND PROFESSIONAL STUDIES**

**EXAM TITLE: ALGORITHM AND PROGRAMMING**

**OPTIONS:**

- **Computer Science (CSC)**
- **Computer Science and Management (CSM)**

**DURATION: 3 hours**

**INSTRUCTIONS:**

The paper is composed of **the following sections:**

**Section I: Fifteen (15) compulsory questions. 55 marks**

**Section II: Attempt any three (3) out of five questions. 30 marks**

**Section III: Attempt any one (1) out of three questions. 15 marks**

**Note:**

***Every candidate is required to carefully comply with the above instructions. Penalty measures will be applied on their strict consideration.***

**Section I. Fifteen (15) Compulsory questions**

**55 marks**

- 
- 01.** What is the significance of an algorithm to C programming? **4 marks**
- 02.** As a programmer distinguish a text files from binary files? **4 marks**
- 03.** What is the use of a semicolon (;) at the end of every C program statement? **4 marks**
- 04.** What is the difference between structure and a class in C++? **4 marks**
- 05.** What is meant by Encapsulation concept? **3 marks**
- 06.** Distinguish among the following the three basic types of statement structures?  
(sequence, loop, decision, input/output) **3 marks**
- 07.** What is meant by flowchart? **3 marks**
- 08.** Write the result of the following code. **4 marks**
- ```
Dim Boy as string = "Paul"  
Dim Girl as string = "Clare"  
txtBox.Text = Boy &"and"& "Girl" &"went up the hill"
```
- ✓ Nothing correct, there is an error.
  - ✓ "Paul and Clare went up the hill"
  - ✓ "Paul and Girl went up the hill"
  - ✓ " and went up the hill"
- 09.** What characterises the variable "double in VB? **3 marks**
- 10.** Distinguish among the following all valid rules for naming variables? **3 marks**
- ✓ Names may contain digits
  - ✓ Names may contain underscores
  - ✓ Names may contain letters
  - ✓ Names may contain spaces.
- 11.** Write the correct statement used to declare an integer variable in VB.NET language. **3 marks**

- ✓ Dim x As Integer;
- ✓ Dim x As Single;
- ✓ X As Integer;
- ✓ No correct answer listed

12. What is the purpose of main () function? **4 marks**

13. Define the term source code. **4 marks**

14. The major difference between a List Box versus a Combo Box is \_\_\_\_\_ **3 marks**

- ✓ nothing, the both behave exactly the same in VB.NET
- ✓ a Combo Box will allow the user to enter text other than what is listed in the List
- ✓ a List Box will take up less room on the form
- ✓ a List Box will allow the user to enter text other than what is listed in the List

15. What are header files and what are its uses in C programming? **6 marks**

**Section II. Choose and answer any three (3) questions** **30 marks**

16. Provide answers to the following series of questions *help - my sctey*

a. What does the && operator do in a program code? *event*

b. Write the expected output of the following C codes *event*

```
#include<stdio.h>

int main()
{
float a=10, b=20;
if(a&& b>10)
printf("Mucyo");
else
printf("Manzi");
return 0;
}
```

(Manzi, Mucyo, Run time error, Logic error).



| Boolean Expression          | <b>Underline</b> the correct value of the expression |       |
|-----------------------------|------------------------------------------------------|-------|
| yes() && no()               | True                                                 | False |
| no()    yes()               | True                                                 | False |
| !(no() && (yes()    !no())) | True                                                 | False |
| (no()    !(true && !no()))  | True                                                 | False |
| !(no() && (yes()    !no())) | True                                                 | False |

**10 marks**

**Section III. Choose and answer any one (1) question**

**15 marks**

**21.** Write a pseudocode algorithm and Flowchart algorithm determining a student's final average marks of three subjects (M1, M2 and M3) and indicate whether he/she is passing or failing the subjects based on average marks of the 3 subjects being above or below 50.

**15 marks**

**22.** Answer to the following series of questions:

- A)** Define an ActiveX Data Objects as used in VB.
- B)** Give at least four ADO object:
- C)** Give one primary use of each of the following ODBC, OLE and VB IDE.
- D)** Define File System Controls and explain the three File System Controls in VB.

**15 marks**

**23.** Write a C program to find largest number using if...else statement.

**15 marks**

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