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| **جامعة فيلادلفيا**  ***cid:image001.png@01CFF76F.9CE975D0***  Philadelphia University | اسم النموذج: Paper Examination | **QFO-AP-FI-QA07** |
| **الجهة المصدرة: كلية تكنولوجيا المعلومات** | **رقم الاصدار :**  **Revision) ) 1** |
| **الجهة المدققة: عمادة التطوير والجودة** |
| **التاريخ :05/11/2017** |
| **عدد صفحات النموذج: 1** |

**Lecturers: Please add your names here**

**Coordinator: E.Naffar**

**Internal Examiner: M.Taye**

**Programming fundamentals (0750113) Mid Exam Time: 60 Minutes**

**Academic Year 2023/ 2024 - First Semester Date:**

#### Information for Candidates

1. *This examination paper contains 6**questions, totalling* ***33*** *marks.*
2. *The marks for parts of questions are shown in round brackets.*

## Advice to Candidates

*1. You should attempt all questions.*

*2. You should write your answers clearly.*

##### I. Basic Notions

*Objectives: The aim of the questions in this part is to evaluate the required minimal student knowledge and skills. Answers in the pass category represent the minimum acceptable standard.*

**Question 1: [9 Marks]   
Choose the correct answer for the following multiple choice questions**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **9** | **8** | **7** | **6** | **5** | **4** | **3** | **2** | **1** |
|  |  |  |  |  |  |  |  |  |

**1) Which of the following code segments will cause a syntax error?**

1. cout >> "x = \t ">> x;
2. int x = 10, y=0, z;

z=x/y;

1. Sum = X \* Y;
2. None of the above

**2) Which of the following is an invalid C++ variable identifier?**

1. 123abcd
2. abcd-1234
3. abcd1234
4. A+B

**3) If num1 is an integer variable which of the following is the correct C++ declaration and initialization for num1?**

1. int num1 = 5;
2. int num1;
3. int = num1 = 5;
4. num1=5;

**4) Which of the following is used for multiple-line comments in C++?**

1. #
2. %
3. /\* \*/
4. $

**5) in the following code segment what is the final value for num1?**

**#include <iostream>**

**using namespace std;**

**void main()**

**{**

**int x = 2 , y = 3, num1;**

**switch(x+y)**

**{**

**case 5: num1=5;**

**case 10: num1=10;**

**case 15: num1=15;**

**case 20: num1=20;**

**}**

**}**

1. 5
2. 10
3. 15
4. 20

**6) Which of the following data types is provided by C++ ?**A) double  
B) float  
C) bool  
D) all of the above.

7) **Which of the following statements is considered a selection statement in C++?**

**A)**if/else statement

**B)**for statement

**C)**switch statement

**D)**Both A and C

8) Which of the following is correct for multiplying an integer variable ( num1) by two?

1. num1= num1 \* 2;
2. num1 \*= 2;
3. num1= 2;
4. A + B correct

9) What is the output of the following statement if x = 5?

cout<< x++;

1. 7
2. 5
3. 6
4. None

**II. Familiar Problems Solving**

Objectives*: The aim of the questions in this part is to evaluate that the student has some basic knowledge of the key aspects of the lecture material and can attempt to solve familiar problems*

**Question 2: [4 marks, 2 marks each]**

In the code segment below, the programmer has almost certainly made two error(s).

#include <iostream>

using namespcace std;

1. int main(){

2. int t = 1, p = 23;

3. t = w \* p;

4 . cout >> t;

6. int f = 68;

7. return 0; }

Identify the two errors and Correct each one.

**Question 3:**  **[5 marks, 2.5 marks each]**

Find the output of the following programs:

1. First program

#include <iostream>

using namespace std;

int main()

{

int num1, num2;

cout<<"Enter first number:";

cin>>num1;

cout<<"Enter second number:";

cin>>num2;

if(num1>num2)

{

cout<<"First number "<<num1<<" is the largest";

}

else

{

cout<<"Second number "<<num2<<" is the largest";

}

return 0;

}

Note: assume that num1= 16 and num2= 13.

1. Second Program

#include <iostream>

using namespace std;

int main()

{

int num1, num2, temp;

cout<<"Enter two Numbers: ";

cin>>num1>> num2;

//swapping

temp=num1;

num1=num2;

num2=temp;

//displaying numbers after swapping

cout<<"\nAfter Swapping: First Number: "<<num1<<" Second Number: "<<num2;

return 0;

}

Note: assume that num1= 2 and num2= 5

**Question 4: [6 marks]**

Design a flowchart of a student login in a university system as follows:

* The user should input their username and password.
* If the username equals “student\_IT” and the password equals “12\_34”, then the following message should be displayed "Welcome to students portal", otherwise an error message is displayed to the user.

**Question 5: [6 marks]**

Back to Question 4: Write a C++ program for the login process.

**III. Unfamiliar problem solving**

*Objectives: The aim of the questions in this part is to evaluate that the student can solve familiar problems with ease and can make progress towards the solution of unfamiliar problems, and can set out reasoning and explanation in a clear and coherent manner.*

**Question 6: [3 marks]**

Write a C++ program that takes an integer number as input and prints its multiplication table up to 5 Sample Output: Print the multiplication table of a number up to 5

Input a number: 4

4 x 1 = 4

4 x 2 = 8

4 x 3 = 12

4 x 4 = 16

4 x 5 = 20

Good Luck