

Islamic University of Gaza

Computer Programming

ECOM 2401 & EELE 2315

Fall 2011-2010

Date : 22, January, 2011,

Time : 11:00-13:00

Final Exam

Student Name:

Student Id:

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Question	Points
Question 1	
Question 2	
Question 3	
Question 4	
Question 5	
Question 6	
Question 7	
Total	70

Question 1 : (10 Point)

Choose the correct answer

- 1) **The type of variable whose allocated storage is 4 byte and contains values that can be stored are positive or negative whole numbers**
a. float b. int c. bool d. long
- 2) **A procedural set of instruction or statements, that may take argument then perform some work , and may return a result**
a. property b. object c. class d. function
- 3) **Special words or symbol that denote a special meaning to the compiler and cannot be used for variable or function names are:**
a. language primitives b. subroutines c. header names d. reserved or keywords
- 4) **Variable that can be accessed and altered only within the function in which they are defined are called:**
a. user defined variables b. static variables c. local variables d. global variables
- 5) **The C++ data type that can take on either one of only two possible values is known as**
a. binary b. character c. short d. boolean
- 6) **The modulus operator "%" is used in division to return the**
a. dividend b. quotient c. divisor d. remainder
- 7) **The clause in the SWITCH is executed if no CASE statement match within the "SWITCH/CASE" block:**
a. finally clause b. catch clause c. default clause d. exception routine
- 8) **Passing argument by means of making a copy of the variable's content is known as passing by:**
a. value b. name c. reference d. inheritance
- 9) **The function that must always return control to the operating system is known as:**
a. private b. header c. initial method d. main
- 10) **The function that return no result is said to have a return value of**
a. int b. undeclared c. void d. double

Question 2 : (10 Point)

What is the output of the following code fragment ?

Part1

```
int A =1;
int B =2;
if(((A==1) || (B==2)) && (B==0))
    cout<<"This exam was difficult ";
else
    cout<< "This exam was easy ";
```

Output:	
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Part2

```
int main() {
char *a[] = { "Argentina", "Korea", "Greece", "Nigeria"};
cout << *(a+1) << endl;
cout << *a[0] << endl;
cout << a[3] << endl;
cout << a[3][1] << endl;
return 0;
}
```

Output:	
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Part3

```
double *pt;
double a[3]={1.2, 2.3, 3.4};
pt=&a[1];
pt+=1;
cout<<*pt<<endl;
```

Output:	
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Part4

```
#include <string>
int main() {
string A = "Good morning";
string B = "Good afternoon";
if (A > B)
cout << A;
else
cout << B;
return 0;
}
```

Output:	
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Question 3: (10 Point)

Write a program that prompts the user to enter the year and month , and displays the number of days in the month. For example, if the user entered month 2 and year 2000, the program should display that February 2009 has 29 days. If the user entered month 3 and year 2005, the program should display that March 2010 has 31 days.

Question 4 : (10 Point)

Write (C++) code , including a loop, required to calculate $y(t)$ from the equation:

$$y(t) = \begin{cases} -3t^2 + 5 & t \geq 0 \\ 3t^2 + 5 & t < 0 \end{cases}$$

for values of t between -9 and 9 in steps of 3. Display each value of t and $y(t)$.

Question 5 : (10 Point)

Part1

When asked to create a program to find the volume of any cone. given its radius and height, a programmer created this program to implement the formula $V = \frac{1}{3}\pi r^2 h$. It compiles, and it runs, but it gives completely incorrect results.

A serious problem lies in the **ComputeVolume** function. Additionally, the programmer was confused about parameters and local variables. **Make this function work correctly**, and also **improve its use of parameters**, changing main as necessary. Note any other minor or stylistic errors you might find throughout the program. You can simply note changes on the program listing.

```
double ComputeVolume ( double r, double h, double ans , double r2 );

int main (){
    double radius , height , ans , r2;
    cout<<" Radius : "<< radius;
    cout<< " Height : " << height;
    ans = ComputeVolume (radius , height , ans , r2 );
    cout<< " Volume : "<<ans;
}

double ComputeVolume ( double r, double h, double ans , double r2)
{
    r2 = r*r;
    ans = (1/3)* 3.14 *r2*h;
    return ans ;
}
```

Part2

"Searching is the process of looking for a specific element in an array "

Talk about the searching array techniques and give example

Question 6 (10 point)

Write a function called **MatrixTranspose** to find the transpose of multi-dimensions array.
The header of the function as follow:

```
void MatrixTranspose (int a[][COLUMN_SIZE], int Ta[][COLUMN_SIZE],  
                     int rowSize)
```

Question 7(10 point)

Write program that randomly fills in 0s and 1s into a Tic Tac Toe board, print the board, and find out the rows, columns, or diagonal with all 0s or 1s. Use two-dimensional array to present a Tic Tac Toe board. Here is a sample of the program

```
Tic Tac Toe Board
0 0 0
0 0 1
1 1 1
All 1s on row 2
All 1s on column 2
```

Hint : assume the two-dimensional array is 3*3

*My best Wishes ...
Eng. Wazen M. Shbair*