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**Computer Science Department**

**College of Information Technology**

**Computer programming II**

**Second Exam 8/4/2012**

**Name (in Arabic):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | a | b | c | d |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |
| 5 |  |  |  |  |
| 6 |  |  |  |  |
| 7 |  |  |  |  |
| 8 |  |  |  |  |
| 9 |  |  |  |  |

**Q1: (9 pts)**

Choose the best answer and fill it ONLY in the TABLE on the first page:

Consider the following code to answer ( 1 and 2)

**char s[] ="abcdefgh";**

**char x[10];**

**strcpy (x,strcpy(s,"hello"));**

1) Which of the following prints the last “non null” character in **s**?

a. cout<<s+strlen(s)-1; b. cout<<s+strlen(s)-2; c. cout<<s[strlen(s)-1]; d. a+b

2) What is the output of **cout<<strcmp(x,s);** ?

a. 1 b. -1 c. 0 d. compiler error

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3) Given

**int \*p1=new int;**

**\*p1=4;**

**int \*\*p2=&p1;**

**\*\*p2=5;**

What is the output of **cout<<\*p1;**?

a. 4 b. 5 c. 0 d. compiler error

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Consider the following code to answer ( 4 and 5)

struct Point

{

int x;

int y;

int z;

};

Point p1,p2;

Point \*p=new Point;

4) One of the following gives compiler error:

a. p1.x=3 b. p1={3,2,1}; c. p1=p2; d. p1.x=p2.y;

5) One of the f ollowing gives compiler error

a. p++; b. p=p1; c. p=NULL; d. cin>> p->x;

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6) Given

char \*s[4]={"Ahmad","Zain","Huda"};

char \*ps=s[1];

What is the output of cout<<ps;

a. A b. Ahmad c. h d. Zain

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7) Given

struct info

{

char name[100];

int \*p;

};

info x;

After reading data correctly in x, which of the following does not produce a compiler error?

1. cout<< x.name<<x->p; b. cout<<x->name<<x.p;
2. cout<<x.name<<\*(x.p); d. cout<<x->name <<x->p;

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Consider the following code to answer ( 8 and 9)

#include<iostream.h>

void func(int \* p)

{

\*p=\*p+1;

p+=2;

}

void main()

{

int a[ ] = {2,4,6,8,10};

int\* p = a;

func(p);

cout<<\*p<<endl; …………(1)

cout<<\*a<<endl; ………….(2)

}

8) The output of (1) is:

a. 3 b. 2 c. 4 d. 6

9) The output of (2) is:

a. 3 b. 6 c. 8 d. 2

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**Q2: (4 pts)**

Write a function that accepts a string and returns a pointer pointing to the middle character in the string if it has an odd number of characters, or it points to the first middle character if the string has an even number of characters.

Ex: If the string = ABC , the function returns the address of B

If the string = ATRD , the function returns the address of T

**Q3: (7 pts)**

You are to enter information for a Car Rental Office.

- Office has a name, phone and a number of cars.

- Each car has a brand, a manufacturing year and a rental price.

a) Define the necessary structures that represent the mentioned information. (4pts)

(You must use nested structures)

b) Define a variable for a rental office. (1 pt)

c) Read values for the rental office you defined in (b). (2 pts)