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**NORTH AMERICAN  
UNIVERSITY**  
INSPIRATION INNOVATION GLOBAL COMPETENCE

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**Started on** Thursday, 6 April 2017, 12:40 AM**State** Finished**Completed on** Thursday, 6 April 2017, 12:45 AM**Time taken** 5 mins 38 secs**Grade** **17.00** out of 17.00 (**100%**)**Question 1**

Correct

Mark 1.00 out of 1.00

For an  $O(n^3)$  algorithm, one data set with input size  $n = 4$  takes 128 seconds. How long will it take for a data set for  $n = 2$  and  $n = 3$ ?

Select one:

- ☒ a. 16, 56 ✓
- ☐ b. 16, 48
- ☐ c. 8, 56
- ☐ d. 16, 64

The correct answer is: 16, 56

**Question 2**

Correct

Mark 1.00 out of 1.00

What is the  $O(n)$  for:

```
int myFunction (int A[], int n) {  
    int i, j, sum = 0;  
    for (i=0; i<n-1; i++)  
        for (j=n; j<n; j++)  
            sum++;  
    return sum;  
}
```

Select one:

- ☐ a.  $O(n^2)$
- ☐ b.  $O(\log n * n^2)$
- ☒ c.  $O(n)$  ✓
- ☐ d.  $O(2 * n^2)$

The correct answer is:  $O(n)$

**Question 3**

Correct

Mark 1.00 out of 1.00

Which sorting algorithm has the lowest best time complexity?

Select one:

- ☐ a. Quick Sort
- ☒ b. Bubble Sort ✓
- ☐ c. Selection Sort
- ☐ d. Merge Sort

The correct answer is: Bubble Sort

**Question 4**

Correct

Mark 1.00 out of 1.00

Consider the following recursive function.

```
int Fun ( int n )  
{  
    if ( n == 3 )  
        return 1;  
    else  
        return 3 * Fun ( n + 1 );  
}
```

What is the value returned by the function call

Fun (0) ?

Select one:

- ☐ a. 1
- ☐ b. 3
- ☐ c. 9
- ☒ d. 27 ✓
- ☐ e. 0

The correct answer is: 27

**Question 5**

Correct

Mark 1.00 out of 1.00

How many times the while loop will get executed?

```
#include<stdio.h>
```

```
int main()
```

```
{
```

```
    int j=5;
```

```
    while(j >= 0)
```

```
    {
```

```
        printf("%c %d\n", j, j);
```

```
        j--;
```

```
    }
```

```
    return 0;
```

```
}
```

Select one:

- ☐ a. 4
- ☐ b. 5
- ☒ c. 6 ✓
- ☐ d. 0
- ☐ e. infinite times

The correct answer is: 6

**Question 6**

Correct

Mark 1.00 out of 1.00

In mathematics and computer programming, which is the correct order of mathematical operators ?

Select one:

- ☐ a. Addition, Subtraction, Multiplication, Division
- ☒ b. Multiplication, Division, Addition, Subtraction, ✓
- ☐ c. Multiplication, Addition, Division, Subtraction,
- ☐ d. Addition, Division, Modulus, Subtraction

The correct answer is: Multiplication, Division, Addition, Subtraction,

**Question 7**

Correct

Mark 1.00 out of 1.00

Which of the following sorting methods would be most suitable for sorting a list which is almost sorted?

Select one:

- ☒ a. Bubble Sort ✓
- ☐ b. Insertion Sort
- ☐ c. Selection Sort
- ☐ d. Quick Sort

The correct answer is: Bubble Sort

**Question 8**

Correct

Mark 1.00 out of 1.00

A B-tree of minimum degree  $t$  can maximum \_\_\_\_ pointers in a node.

Select one:

- ☐ a.  $t-1$
- ☐ b.  $2t-1$
- ☐ c.  $2t$
- ☒ d.  $t$  ✓

The correct answer is:  $t$

**Question 9**

Correct

Mark 1.00 out of 1.00

One can convert a binary tree into its mirror image by traversing it in

Select one:

- ☐ a. Inorder
- ☐ b. Preorder
- ☒ c. Postorder ✓
- ☐ d. Any Order

The correct answer is: Postorder

**Question 10**

Correct

Mark 1.00 out of 1.00

Which one of the following is not a programming language design evaluation criteria?

Select one:

- ☐ a. Readability
- ☐ b. Writability
- ☒ c. Security ✓
- ☐ d. Cost

The correct answer is: Security



**Question 11**

Correct

Mark 1.00 out of 1.00

Consider the following JavaScript program:

```
var x;
```

```
function first(){
```

```
    document.write(x);
```

```
}
```

```
function second(){
```

```
    var x;
```

```
    x = 7;
```

```
    first();
```

```
}
```

```
x=3;
```

```
second();
```

What value of x will be printed assuming static scoping is used? What value of x will be printed assuming dynamic scoping is used?

Select one:

- ☒ a. Static: 3, Dynamic: 7 ✓
- ☐ b. Static: 7, Dynamic: 3
- ☐ c. Static: 7, Dynamic: 7
- ☐ d. Static: 3, Dynamic: 3

The correct answer is: Static: 3, Dynamic: 7

**Question 12**

Correct

Mark 1.00 out of 1.00

Which one is a common asymmetric encryption algorithm?

Select one:

- ☐ a. Triple DES
- ☐ b. IDEA
- ☒ c. RSA ✓
- ☐ d. Blowfish

The correct answer is: RSA

**Question 13**

Correct

Mark 1.00 out of 1.00

Which of the following is the weakest form of wireless security?

Select one:

- ☒ a. WEP ✓
- ☐ b. WPA
- ☐ c. Disabling SSID beaconing
- ☐ d. MAC filtering

The correct answer is: WEP

**Question 14**

Correct

Mark 1.00 out of 1.00

A black box tester \_\_\_\_.

Select one:

- ☐ a. analyzes log entries
- ☐ b. has access to the internal structure information
- ☒ c. is unaware of the internal structure ✓
- ☐ d. can determine security policy

The correct answer is: is unaware of the internal structure

**Question 15**

Correct

Mark 1.00 out of 1.00

The five general phases in the Spiral model are:

Select one:

- ☒ a. Analysis, Design, Implementation, Testing, and Review ✓
- ☐ b. Review, Decision, Engineering, Acceptance, and Planning
- ☐ c. Analysis, Design, Engineering, Testing, and Payment
- ☐ d. Review, Risk-analysis, Prototyping, Engineering, and Planning

The correct answer is: Analysis, Design, Implementation, Testing, and Review

**Question 16**

Correct

Mark 1.00 out of 1.00

The worst type of coupling is :

Select one:

- ☐ a. Data coupling
- ☐ b. Control coupling
- ☐ c. Stamp coupling
- ☒ d. Content coupling ✓

The correct answer is: Content coupling

**Question 17**

Correct

Mark 1.00 out of 1.00

UML activity diagrams are useful in representing which analysis model elements?

Select one:

- ☐ a. Behavioral elements
- ☐ b. Class-based elements
- ☐ c. Flow-based elements
- ☒ d. Scenario-based elements ✓

The correct answer is: Scenario-based elements