Tutorial 1

Objective C, C++

Q1- How many pointers will have to be changed/ updated if a node is deleted from a linear linked list?

- **a)** 0
- **b)** 1
- **c)** 2
- **d)** all pointers will be changed

Q2- A programmer writes a piece of code where a set of three lines occur around 10 times in a different parts of his program. What programming concept can he use to shorten program length?

- **a)** Use for loops
- **b)** Use classes
- **c)** Use functions
- **d)** Use arrays

Q3- What does the following fragment of C program will print?

```
char c[ ] = “DATA1234”;
char *p = c;
printf(“%s”, p+p[3]-p[1]);
```

- **a)** DATA1234
- **b)** 234
- **c)** 1234
- **d)** A1234

Q4- A variable cannot be used:

- **a)** Before it is declared
- **b)** After it is declared
- **c)** In the function it is declared in
- **d)** Can always be used

Q5- Which of the following types of data member can be shared by all instances of its class?

- **a)** Public
- **b)** Inherited

c) Static
d) Friend

Q6- How many types of polymorphism exists in C++?

a) 5
b) 3
c) 4
d) 6

Q7- A pseudo-code is used. Assume that when two data-types are processed through an operator, the answer maintains the same data-type as the input data-types. Assume that all data-types have enough range to accommodate any number. If two different data-types are operated on, the result assumes the more expressive data-type.

What will be the output of the following pseudo-code statements:

```
integer a = 456, b, c, d=10
b = a/d
c = a-b
print c
```

a) 410
b) 410.4
c) 411.4
d) 411

Q8- When dealing with a function call, which does not matter:

a) Number of formal, informal parameters
b) Return type of function
c) Data type of formal, informal parameters
d) Operation done in function body

Q9- What is the term given to the memory allocation that takes place during run time rendering the resizing of an array?

a) Static allocation
b) Dynamic allocation
c) Automatic allocation
d) Executive allocation

Q10- Which of the following cannot be inherited?

a) Friend function
b) Destructor
c) Constructor
d) Static function

Q11- Which of the following operators cannot be overloaded?

a) []
b) ->
c) ?:
d) *

Q12- What will be the output of following C code?

```
struct ABC
{
int b = 6;
char c;
}
structure;
int main()
{
int I = sizeof(structure);
printf("%d",i);
}
```

a) 6
b) 4
c) 1
d) 2

Q13- Choose the correct option:

Assume the following precedence (high to low). Operators in the same row have the same precedence:

(,)
* /
+ -
AND
OR

For operators with equal precedence, the precedence is from left-to-right in expression.

integer a = 6, b = 35, c = -30

What will be the output of the following two statements:

```
print ( a>45 OR b>50 AND c>10)

print ( ( a>45 OR b>50) AND c>10)
```

a) 0 and 1
b) 0 and 0
c) 1 and 1
d) 1 and 0

Q13- Which of the following operator is overloaded for object cout?

a) >>
b) <<
c) +
d) =

Q14- Which type of class allows only object of it to be created?

a) Virtual class
b) Abstract class
c) Singleton class
d) Friend class

Q15- Which of the following options is true with regard to private and protected members of a class?

a) Both have the same properties with regard to an object of the class.
b) Private members cannot be directly accessed. While protected members can be directly accessed.
c) Protected members cannot be accessed by member functions, while private members can be accessed by member functions.
d) Private and protected members are same in all regards.

Q16- What is the simplest way of implementing a graph in C or C++ ?

a) Associative lists
b) Adjacency matrix
c) Both adjacency matrix and associative list
d) None of these

Q17- What will be the output of the following code?

```
#include<stdio.h>
main()
{
while ( printf(“%d”, printf(“AZ”)))
printf(“BY”);
```

a) It gives syntax error

b) It will print AZBYAZBYAZBY…..

c) It will print AZBYBYBY…..

d) None of these

Q18- Which of the following statements is correct?

a) Pointer to base class cannot be created.

b) Pointer to derived class cannot be created.

c) Base class pointer cannot point to derived class.

d) Derived class pointer cannot point to base class.

Q19- Following is the program to print the sum of the first 7 multiples of 6:

```
int i = 0; // statement 1
int sum; // statement 2
while ( i <= 42 ) // statement 3
{
sum = sum + i; // statement 4
i = i+6; // statement 5
}
print sum; // statement 6
```

Does this program have an error? If yes, which one statement will you modify to correct the program?

a) No error

b) Statement 5

c) Statement 3

d) Statement 2

Q20- What is the ouput of the following program?

```
void func(char** param){
++param;
}
int main(){
char* string = (char*)malloc(64);
strcpy(string, “hello_World”);
```

```
func(&string);
func(&string);
printf("%s\n", string);
return 0;
}
```

a) Hello_World
b) Ello_World
c) Llo_World
d) Illegal memory access

Q21- The following is a recursive function. Assuming the input parameter n is a non-negative integer, what is the returned value for rec(4) ?

```
int rec(const int n)
{
if (n < 2)
return n;
return rec(n-1) + rec(n-2)+1;
}
```

a) 6
b) 7
c) 11
d) 12

Q22- What is the output of the following program?

```
void main(void){
int a = 5, b = 3, c = 2, d = 2;
printf("%d %d", ++a/3-c*d, a-b*c%(d+3));
}
```

a) -2 4
b) -1 4
c) -2 -1
d) -1 4

Q23- Consider the following code

```
void main()
{ int c = 4, d = 3;
if( c==1 ) if ( d==2 ) c=5; else if (d ==3 ) c=6; else c=7; else c=8;
cout<< c << endl;
```

```
}
```

What is the output?

a) 6

b) 7

c) 8

d) 5

Q24- What is the output of the following program?

```
int x =1;
void mystery1()
{
static int x = 50;
cout << x++ << endl;
}
void mystery2()
{
x *= 10;
cout << x << endl;
}
int main()
{
int x = 5;
{
int x = 7;
}
mystery1();
mystery1();
mystery2();}
}
```

a) 50 51 10

b) 50 50 10

c) 50 51 510

d) 50 50 500

Q25- What is the output of the following program?

```
int main()
{ float f =5.4; int x=2;
float result = (f/x)*3 + 2;
int result1 = (f/x)*3 + 2;
float result2 = (int)(f/x)*3/4.0 + 2;
printf("%f %d %f",result,result1,result2);
}
```

a) 10.1 10 3.5
b) 10.1 10 3
c) 10.1 8 3.5
d) 10.1 8 3

Q26- Code:

```
int z,x=5,y=-10,a=4,b=2;
z = x++ - --y * b / a;
```

What number will z in the sample code above contain?

a) 5
b) 6
c) 10
d) 11

Q27- Consider the statement

while (a < 10.0) { a = a*a}

Assuming a is positive, for what value of a will this code statement result in an infinite loop?

a) a < 1.0
b) a < sqrt(10)
c) a > sqrt(10)
d) a = 0

Q28- How "late binding" is implemented in C++?

a) Using C++ tables
b) Using virtual tables
c) Using indexed virtual tables
d) Using polymorphic tables

Q29- Consider the following code:

```
function modify(y,z) {
 y = y + 1;
z = z + 1;
 return y  z }
function calculate( ) {
 integer a = 5, b = 10, c;
 c = modify(a, b);
print a
print space
```

```
print c
}
```

Assume that a and b were passed by value. What will be the output on executing function calculate( )?

a) 11 -5
b) 10 -5
c) 6 -5
d) 5 -5

Q30- Shravanti writes the following program:

```
integer i = 0, j
while ( i < 2 )
{j = 0;
while ( j <= 3*i )
{print j
print blank space
j = j + 3}
i = i + 1
}
```

What will be the output of the program?

a) 0 0 3
b) 0 3 0 3 6
c) 0 0 3 6 0 3 6 9
d) 0 3 6 0 3 6 9 0 3 6 9 12