



UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA

FIRST SEMESTER EXAMINATIONS, NOV/ DEC. 2018

COURSE NO: CE/EL/MA-163

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COURSE NAME: PROCEDURAL PROGRAMMING WITH C++

CLASS: CE/EL/MA I

TIME: 2 HOURS

Name: _____ Index Number: _____

Answer all questions. The multiple choice question is 0.5 marks each and 1 mark each for the others

- Which of the following statements would display the phrase C++ is fun?
 - `std::cout << '++ is fun';`
 - `std::cout << ""C++ is fun"";`
 - `std::cout << '++ is fun!';`
 - `std::cout << '++ is fun';`
- Assuming that the string object text contains the string "Hello!!!", the expression `text.substr(2 , 5)` would return a string object containing the string:
 - "llo!!!"
 - "ello!!!"
 - "ello!"
 - "llo!!!"
- Which of the following statements could potentially change the value of number2?
 - `Sum=number1+number2;`
 - `Std::cin>>number2;`
 - `number1=number2;`
 - `std::cin>>number2;`
- Specifying the order in which statements are to be executed in a computer program is called:
 - An algorithm
 - Transfer of control
 - Program control
 - Pseudocodes
- Which of the following is not part of the selection control structure?
 - if
 - if...else
 - switch
 - do...while
- What is wrong with the following while loop? `while (sum <= 1000) sum=sum-30;`
 - `sum = sum - 30` should be `sum = sum + 30` or else the loop may never end.
 - There should be a semicolon after `while (sum <= 1000)`
 - Braces are required around `sum = sum - 30;`
 - The parentheses should be brace.
- Indefinite repetition is controlled by a:
 - Counter
 - Absence of a condition
 - Sentinel Value
 - Non-constant condition
- What is the final value of x after performing the following operations? `int x = 21;double y = 6;double z = 14;y = x / z;x = 5.5 * y;`

- a. 5
 - b. 8
 - c. 5.5
 - d. 8.25
9. If a do...while structure is used:
- a. The body of the loop will execute at least once.
 - b. An infinite loop will not take place.
 - c. Counter-controlled repetition is not possible.
 - d. An off-by-one error will not occur.
10. What does the function signature consist of?
- a. The list of argument types
 - b. Return type, the function name, and list of argument types
 - c. Return type
 - d. Function name
11. How do you declare a preprocessor constant named RECORD_COUNT with the value 1500?
- a. `#define RECORD_COUNT 1500`
 - b. `#include RECORD_COUNT 1500`
 - c. `Cont RECORD_COUNT 1500`
 - d. `Cont RECORD_COUNT=1500`
12. What is the size of the floating point double?
- a. 4 bytes
 - b. 32 bytes
 - c. 8 bytes
 - d. 16 bytes
13. The function prototype `double mySqrt(int x);`
- a. Declares a function called `mySqrt` which takes a double as an argument and returns an integer.
 - b. Defines a function called `mySqrt` which takes an argument of type `x` and returns a double
 - c. Defines a function called `double` which calculates square roots.
 - d. Declares a function called `mySqrt` which takes an integer as an argument and returns a double.
14. Which statement would be used to declare a 20-element integer array `c`?
- a. `c = int[20];`
 - b. `int array c[20];`
 - c. `int c [twenty];`
 - d. `int c[10];`
15. Which of the following character array declarations does not produce a string?
- a. `char string1[] = "test";`
 - b. `char string1[] = "";`
 - c. `char string1[] = { 't', 'e', 's', 't' };`
 - d. `char string1[] = { 't', 'e', 's', 't', '\0' };`
16. A double subscripted array element declared as `a[5][4]` has how many elements?
- a. 9
 - b. 8
 - c. 15
 - d. 20

17. Given the following declaration, what is the value of `b[1][0]`?

```
int b[ 2 ][ 2 ] = { { 1 }, { 3 , 4 } };
```

- a. 3
- b. 1
- c. 0
- d. This is not a valid declaration

18. How do you declare a function named “Find” that takes a `recordId` by reference?

- a. `Find(int !recordId){}`
- b. `Find(int ref recordId){}`
- c. `Find(int recordID){}`
- d. `Find(int& recordId){}`

19. The correct order in which an exception is detected and handled is:

- a. throw, catch, try.
- b. try, throw, catch.
- c. try, catch, throw
- d. catch,throw, try

20. How do you bring a namespace into your code so you do not have to prefix the function name with that namespace?

- a. `#include`
- b. `#include namespace`
- c. Using namespace
- d. `using namespace`

21. Which of the following C++ statements contain variables whose values are replaced?

- a. `cin >> b >> c >> d >> e >> f;`
- b. `p = i + j + k + 7;`
- c. `cout << "variables whose values are replaced";`
- d. `cout << "a = 5";`

22. What, if anything, prints when each of the following C++ statements is performed? Given that `int x = 2` and `int y = 3`, which of the following prints out nothing?

- a. `cout << x + x;`
- b. `cout << x + y << " = " << y + x;`
- c. `cin >> x >> y;`
- d. `cout << "\n";`

23. Analysing the code below, what would be the value of the variable `total` when the code is compiled and executed.

```
#include <iostream>
using namespace std;

int main(){
    int x = 1;
    int total;
    while ( x <= 10 )
    {
        total += x;
        x++;
    }
    cout<<total;
return 0;]
}
```

- a. 54
- b. 45
- c. 55
- d. 44

24. Analysing the code below, what would be printed to the console when the code is compiled and executed.

```
#include <iostream>
using namespace std;
int main(){
    for ( int i = 1; i <= 5; ++i )
    {
        i++;
        cout<<"*";
    }
return 0;
}
```

- a. ***
- b. *****
- c. ****
- d. *****

25. Analysing the code below, what would be the value of the variable total when the code is compiled and executed.

```
#include <iostream>
using namespace std;
int main(){
    for ( int i = 1; i <= 5; ++i )
    {
        cout<<"*";
    }
return 0;
}
```

- a. ***
- b. *****
- c. ****
- d. *****

26. Analysing the code below, what would be printed to the console when the code is compiled and executed.

```
#include <iostream>
using namespace std;
int main()
{
    cout << "long " << sizeof(long) << endl;
return 0;
}
```

- a. 4
- b. 2
- c. 8
- d. eight

27. Analysing the code below, what would be printed to the console when the code is compiled and executed.

```
#include <iostream>
```

```
using namespace std;
int main()
{
cout << "long " << sizeof(float) << endl;
return 0;
}
```

- a. 4
- b. 2
- c. 8
- d. eight

28. Analysing the code below, what would be printed to the console when the code is compiled and executed.

```
#include <iostream>
using namespace std;
int main(int argc, const char *argv[]) {
    int y, x = 1, total = 0;
    while ( x <= 10 ) {
        y = x * x;

        total += y;
        ++x;
    }
    cout << "Total is " << total << endl;
    return 0;
}
```

- a. Total is 265
- b. Total is 365
- c. Total is 165
- d. Total is 465

29. Which one of the following types is available in both signed and unsigned version?

- a. Short int
- b. All of these answers
- c. long int
- d. char

30. Preprocessor directives are processed before the C++ program is:

- a. Loaded
- b. Linked
- c. Executed
- d. Compiled

Provide short answers (C++ statements) for the following

Use this instruction to answer questions 31-34: Write C++ statements to accomplish each of the following tasks.

- 31. Declare variable sum to be of type unsigned int and initialize it to 0.
- 32. Declare variable x to be of type unsigned int and initialize it to 1.
- 33. Add variable x to variable sum and assign the result to variable sum.
- 34. Print "The sum is: " followed by the value of variable sum.

Use this instruction to state the values of each of these unsigned int variables after the calculation is performed. Assume that, when each statement (questions 35-36:) begins executing, all variables have the integer value 5.

- 35. product *= x++;

36. quotient /= ++x;

37. quotient /= x++;

Correct the Code Errors) Identify and correct the error(s) in each of the following:

```
38. if ( age >= 65 );  
    cout << "Age is greater than or equal to 65" << endl;  
    else  
    cout << "Age is less than 65 << endl";  
39. if ( age >= 65 );  
    cout << "Age is greater than or equal to 65" << endl;  
    else  
    cout << "Age is less than 65 << endl";  
40. int g()  
    { cout << "Inside function g" << endl;  
    int h(){  
    cout << "Inside function h" << endl;  
    }  
    }
```

Determine whether the following program segments contain errors. For each error, explain how it can be corrected. [Note: For a particular program segment, it's possible that no errors are present in the segment.]

```
41. void printResults( int x, int y ){  
    cout << "The sum is " << x + y << '\n';  
    return x + y;  
}
```

```
42. double cube( int );  
    int cube( int );
```

```
43. double square( double number )  
{  
    double number = 0;  
    return number * number;  
}
```

44. A pointer is a variable that contains as its value the..... of another variable

45. An expression containing the || operator is true if either or both of its operands are true. (true/false)

Examiners: R.K Annan/T. Kwantwi