



COLLEGE OF ENGINEERING, SCIENCE & TECHNOLOGY

SCHOOL OF ELECTRICAL & ELECTRONICS
ENGINEERING

TRADE DIPLOMA IN ELECTRICAL ENGINEERING

FINAL EXAMINATION - TRIMESTER I – 2019

QUESTION PAPER
EEE 554

COMPUTER SYSTEM

Maximum Marks

100

(Time: 3 Hours 10 minutes)

Instructions

1. There are Five (5) sections (A - E). **All sections are compulsory.**
2. Write your **answers legibly** in the **answer booklet** provided.
3. A **time of three (3) hours** is allowed to complete this paper. **Extra 10 minutes** allowed to read the paper.
4. You may **use blue or black ball pen** to write your answers.
5. **Insert all written foolscaps, graph paper, drawing paper, etc.** in their correct sequence and secure with string provided.
6. Write your **student identification** number on each page used.
7. **Begin each answer on a fresh new page** and **use both sides** of the sheets.
8. **No written or handwritten** examination support materials are permitted.
9. **No GSM mobiles or smartphones allowed** during the examination

Section A

Multiple-Choice

[20 Marks]

Q.1 Which operator is used for output stream?

- A. <
- B. >
- C. <<
- D. >>

Q.2 What are mandatory parts in function declaration?

- A. Return type, function name
- B. Return type, function name, parameters
- C. Return type only
- D. Parameters only

Q.3 Which of the following is used to terminate a statement

- A. :
- B.)
- C. ;
- D. }

Q.4 What will happen while using pass by reference

- A. The values of those variable are passed to the function so that it can manipulate
- B. The function declaration should contain ampersand (& in its type declaration)
- C. Call by pointer.
- D. The location of the variable in memory is passed to the function so that it can use the same memory area for its processing.

Q.5 Where does a cin stops its extraction of data?

- A. By seeing a blankspace
- B. By seeing ()
- C. By seeing }
- D. By seeing {}

Q.6 How many minimum numbers of functions are need to be presented in C++?

- A. 0
- B. 1
- C. 2
- D. 3

Q.7 How many ways of passing a parameter are there in C++?

- A. 1
- B. 2
- C. 3
- D. 4

Q.8 What is the output of this program?

```
2  #include <iostream>
3  using namespace std;
4  int main () {
5      int a;
6      cout << "Please enter an integer value: ";
7      cin >> a + 4;
8      return 0; }
```

- A. 73
- B. 2
- C. It will give an error
- D. 4

Q.9 Which one of the following is not a possible state for a pointer?

- A. Hold the address of the specific object
- B. Point one past the end of an object.
- C. zero
- D. point to a tye

Q.10 Which of the following is illegal?

- A. int *ip;
- B. String s, *sp = 0;
- C. int i; double* dp = &i;
- D. int *pi = 0;

Q.11 What does the following statement mean?

```
int (*fp)(char*)
```

- A. Pointer to a pointer
- B. Pointer to an array of chars
- C. Pointer to function taking a char* argument and returns an int
- D. Function taking a char* argument and returning a pointer to int

Q.12 The if..else statement can be replaced by which operator?

- A. Bitwise operator
- B. Conditional operator
- C. Multiplicative operator
- D. Addition operator

Q.13 The switch statement is also called as?

- A. Choosing structure
- B. Selective structure
- C. Certain structure
- D. Optional operator

Q.14 How many types of loops are there?

- A. 4
- B. 2
- C. 3
- D. 1

Q.15 Which looping process is best used when the number of iterations is known?

- A. for
- B. while
- C. do while
- D. nested while

Q.16 Which of the following correctly declares an array?

- A. int array[10];
- B. int array;
- C. array{10};
- D. array array[10];

Q.17 What is the index number of the last element of an array with 29 elements?

- A. 30
- B. 29
- C. 28
- D. User-defined

Q.18 Overloaded functions are

- A. Very long functions that can hardly run
- B. Two or more functions with the same name but different number of parameters or type
- C. One function containing another one or more functions inside it.
- D. Functions with different name.

Q.19 Which of the following accesses the fourth element stored in array?

- A. `array[3];`
- B. `array[4];`
- C. `array(4);`
- D. `array;`

Q.20 The expression `!(a||b)` is equivalent to which of the following expression?

- A. `(!a)&&!b)`
- B. `(!a)||(!b)`
- C. `!(a&&b)`
- D. `(a||b)&&(a&&b)`

Section B**Short Answer Questions [10 Marks]**

1. Write an example of a variable declaration. (1 mark)

2. Write the syntax for if-else statement. (1.5 marks)

3. State the condition under which syntax error occurs. (1 mark)

4. Compare and contrast pass-by-reference and pass-by-value. (2 marks)

5. What is a pseudo-code? (1 mark)

6. What is the difference between a stream insertion and a stream extraction operator? (2 marks)

7. List down all the repetition statements (1.5 marks)

Section C**Programming Output****[20 Marks]**

Find the output of the following program. Assume all required header files are already being included in the program.

1. What is the output of the following C++ program?

(2 marks)

```
1  #include<iostream>
2  using namespace std;
3
4  int main(){
5      int x=10,y=15;
6      int mul=x*y;
7      cout<<x<<"*"<<y<<"="<<mul;
8
9      return 0;
10 }
11
```

2. What is the output of the following program?

(1 marks)

```
1  #include <iostream>
2  using namespace std;
3  int main() {
4      int a;
5      a = 5 + 8 / 2;
6      cout << a;
7      return 0; }
8
```

3. What is the output of the following C++ program?

(2 marks)

```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      int x =3,y =9, z =77;
6      if(x ==(y/3))
7      {
8          cout<<"H";
9          if(z == 77)
10         {
11             cout<<"e";
12             if(z*y+x < 0)
13             {
14                 cout<<"g";
15                 if(y ==(x*x))
16                 {
17                     cout<<"llg";
18                 }
19             }
20         }
21     }
22     return 0;
23 }
```

4. What is the output of this program?

(1 mark)

```
1  #include <iostream>
2  using namespace std;
3  void fun(int x, int y) {
4      x = 20;
5      y = 10; }
6  int main() {
7      int x = 10;
8      fun(x, x);
9      cout << x;
10     return 0; }
```


5. What is the output of this program?

(2 marks)

```
5   int main()
6   {
7       int color=2;
8       switch(color)
9       {
10          case 0: cout<<("Black");
11          case 1: cout<<("Blue");
12          case 2: cout<<("Green");
13          case 3: cout<<("Aqua");
14          default: cout<<("Other");
15      }
16      return 0;
17  }
18
```

6. What is the output of the following program segment?

(2 marks)

```
1   #include <iostream>
2   using namespace std;
3   int main()
4   {
5
6   if(1) {
7       cout<<"Hi\n";
8       cout<<"Hello";}
9   return 0;
10 }
```

7. What is the output of the segment below?

(2 marks)

```
5   int main()
6   {
7       int x,y;
8       int *ptr;
9       x=100;
10      ptr=&x;
11      y=*ptr;
12      cout<<("%d\n", y);
13      return 0;
14  }
15
```

8. What is the output of the program segment below?

(1 mark)

```
5  int main()
6  {
7      int val=1;
8
9      do{
10         val++;
11         ++val;
12     }while(val++>25);
13
14     cout << ("%d\n", val);
15
16     return 0;
17 }
18
```

9. What is the output of the segment below?

(1 mark)

```
5  int main()
6  {
7      x = 10;
8
9      if(x > 10)
10         x -= 10;
11     else if(x >= 0)
12         x += 00;
13     else if(x)
14         x += 10;
15     else
16         x -= 10;
17
18     cout<<x<<endl;
19     return 0;
20 }
21
```

10. What is the output of the program segment below?

(1 mark)

```
1 #include <iostream>
2 using namespace std;
3 int main()
4 {
5     int a = 5, b = 6, c;
6     c = (a > b) ? a : b;
7     cout << c;
8     return 0;
9 }
```

11. What is the output of the source code below?

(1 mark)

```
5 int main()
6 {
7     int a=10,b=20,*p,s=0;
8
9     p = &a;
10    a++;
11    (*p)++;
12    s = a + b + *p;
13
14    cout<<s<<endl;
15    return 0;
16 }
17
```

12. What is the output by the following lines of codes?

(2 mark)

```
1 #include <iostream>
2 using namespace std;
3
4 int main()
5 {
6     int x = 2;
7     while (x<10)
8     {
9         if(x%2 == 0)
10            cout<< x<<" ";
11        x++;
12    }
13 }
14
```

13. What is the output of this program?

(2 marks)

```
1  #include <iostream>
2  using namespace std;
3  int main ()
4  {
5  int x, y;
6  x = 5;
7  y = ++x * ++x;
8  cout << x << y;
9  x = 5;
10 y = x++ * ++x;
11 cout << x << y;
12 return 0;
13 }
```

Section D**Correct the Code****[20 Marks]**

1. Find the errors in the following C++ program.

(2 marks)

```
1 | #include <iostream>
2 | using namespace std;
3 | int main()
4 | {
5 |     cout<<"C++ Programming questions and answers"
6 |     return 0;
7 | }
```

2. Find the errors in the following C++ program.

(1 mark)

```
1 | #include <iostream>
2 | using namespace std;
3 | int main()
4 | { interger a;
5 |     cout<<"C++ Programming questions and answers";
6 |     return 0;
7 | }
```

3. Identify the error in the program segment below.

(1 mark)

```
1 | #include <iostream>
2 | using namespace std;
3 | int main()
4 | { int x = 10;
5 |     int y =15;
6 |     cout<<(x, y)<<endl
7 |     return 0;
8 | }
```

4. This program should print hello repeatedly. Identify the error. (1 mark)

```
1 | #include <iostream>
2 | using namespace std;
3 | int main(void)
4 | {
5 |     while(.){
6 |         cout<<("Hello")<<endl;
7 |     }
8 |     return 0;
9 | }
```

5. Identify the error in the program segment. (2 marks)

```
1 | #include <iostream>
2 | using namespace std;
3 | int main()
4 | { int a,b;
5 |     cout >>"a=";
6 |     cin <<a;
7 |     b=a;
8 |     return 0;
9 | }
```

6. The program should display volume. Recognize the error and write (3 marks)

```
1 | #include <iostream>
2 |
3 | int main()
4 | { const PI = 3.14;
5 |     int r,h;
6 |     cout <<"Enter values of r and h';
7 |     cin >> r,h;
8 |     v= PI*r*r*h;
9 |     cout <<"volume="<<v;
10 |     return 0;
11 | }
```

7. The following code should declare an integer variable and assign it the value 8. Identify the errors (1 mark)

```
4 | int 1stPlace
5 | 1stplace = 6;
```

8. The following while loop should compute the product of all integers between 1 and 10, inclusive. Identify the error. (3 marks)

```
4 int i = 1;
5 int product = 1;
6
7 while (i<=10);
8     product *= i;
```

9. The for loop should print array values of 0 to 10. Identify the error. (1 mark)

```
4 int array[10] = {0};
5 for (int i = 0; i <=10; i++)
6     cout << array [ i ];
```

10. The following program segment defines a function Greatest, which returns the largest of three integers: Identify the error. (3 marks)

```
3 int greatest(int x, int y, int a);
4 {
5     int max = x;
6     if ( y > max)
7         y = max;
8
9     if(a>max)
10        max = x;
11    return max;
12 }
```

11. The following program segment accepts inputs and sums integers from the user until the sentinel value, 9999, is entered. (2 marks)

```
6 int total = 0;
7 int input;
8 while (input != 9999)
9 {
10     cin >> input;
11     total += input;
12 }
```

Section E**Programming****[30 Marks]**

In mathematics raising a number n to a power p is the same as multiplying n by itself p times.

$$(n)^p = n * n * n * n \dots \dots$$

Write a user define function called `power()` that takes a double value for n and an int value for p , and returns the result as a double value. Use a default argument of 2 for p , so that if this argument is omitted, the number n will be squared. Write a `main()` function that gets values from the user to test this function.

Note: You are not to use power function from C++ math library.

The End