ESC 101: Fundamentals of Computing		**Major Quiz 1**		Date: 04 – 02 - 2019		
Name						**B**
Roll No.		Dept.		Section		

Total 50 **Marks**

Instructions:

1. This question paper contains a total of **1** page (**1** side of paper).
2. Write your name, roll number, department, and section on every side of every sheet of this booklet
3. Write final answers neatly with a blue/black pen in the given boxes.
4. **Answers written outside the box will NOT be graded.**

Q. 1. Mark True or False against the given statements (1*8 = 8 Marks)

1. printf("%%d", 3); This statement prints %3	F
2. int a = 2, b = 0; If (a = b) { printf("hi") } prints "hi" (without quotes)	F

3. switch('E'-'A'){
case '4': printf("0");
case 4: printf("1"); }
The above code prints 1
	T

4. int a = 0; for (i=0; i>=9;i+=3) { a++; } The final value of a is 4	F
5. _var43 is a valid variable name in C	T
6. printf("%5d",-7); prints : "-00007" (without quotes)	F
7. printf("I am "The Godfather" "); prints : I am "The Godfather"	F
8. printf("%d", 4 * (3--)) gives compile time error	T

Q. 2. Multiple Choice Question (Single Correct Only) (2*3 = 6 Marks)

1. How will the following expression be evaluated in C ? e=b=d+c/b-a
   - ((e=b)=((d+c)/(b-a)))
   - ((e=b)=(d+((c/b)-a)))
   - **(e=(b=((d+(c/b))-a)))**
   - (e=(b=(d+((c/b)-a))))

2. How will the following expression be evaluated in C ? x -= y /= a * b
   - **(x -= (y /= (a * b)))**
   - (x -= ((y /= a) * b))
   - (((x -= y) /= a) * b)
   - None of the above

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3. int a=3, b=2; b = a == b == 0;

Value of a and b will be after running above 2 statements:

- **3, 1**
- 3, 0
- 1, 2
- None of the above

Q. 3. Write the output of the following code-snippets in the boxes (4*6 = 24 Marks)

a.)

```
int i, x=0;
for (i = 0; i < 1; printf("%d", x)) {
   x++;
   i = x;
   printf("%d", x);
}
```

a.)
11

b.)

```
int a = 5;
switch (++a) {
   default:
      printf("5");
   case 4:
      printf("4");
      break;
   case 5:
      printf("3");
}
```

b.)
54

c.)

```
 int a = 4, i, j;
for (i = 0; i < 5; i += 2) {
   for (j = i; j < 5; j += 2) {
        if (j >= 3) {
           break;
           printf("Major Quiz 1");
         } else {
            printf("%d ", j);
         }
   }
}
```

c.)
0 2 2

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d.)

```
for (int i = 1, j = 7; i <= 23; i += 11) {
    for (; j < i; j *= 2) {
        printf("%d %d\n", i, j);
    }
}
```

d.)
12 7
23 14

e.)

```
int x = 1;
while (1) {
    if ((x++) < 3) {
        continue;
    } else {
        printf("x reached %d\n", x);
        x++;
    }
    if ((++x) <= 5) {
        x -= 1;
        printf("I am stuck here\n");
        continue;
    } else {
        break;
    }
}
```

e.)
x reached 4

f.)

```
int i = 2, j = 3;
for(; i-- && j++; );
    printf("%d %d", i, j);
```

f.)
-1 5

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Q. 4: Write the output of the following program for the given set of inputs.

(4*3=12 Marks)

```
#include <stdio.h>
int main() {
        int a=1, b=2, len=4;

        for(int i=0; i<len; i++){
          char in, offset, res;
          scanf("%c%c", &in,&offset);
          if(i%3%2){
            res = in+a*(offset -'0');
          }
          else if(!(i%3)){
            res = in+!(offset-'0');
          }
          else{
            res = in+b*(offset-'0');
          }
          if(res-'Z'>0){
            res-='Z';
            res+='A'-1;
          }
          else if(res-'9'>0 && res<='9'){
            res+='0';
            res-='9'+1;
          }
          printf("%c",res);
      }
    return 0;
     }
```

Input-I
user input = J3A5M0U4
Output
JFMU

Input-II
user input = G8U6R3G9
Output
GAXG

Input-III
user input = M2U3M0B5
Output
MXMB