ESC101 - QUIZ 2 Session 1

Total points

The quiz will be conducted in two sessions of 20 minutes each with a gap of 10 minutes in between two sessions.
Read all instructions mentioned in the problem statement carefully before attempting it and try to keep your answers precise. Make sure to submit your response on time. Auto-submission is not available and if you fail to submit on time, you will get zero marks.
If there are any issues like internet/power outage contact your Tutor ASAP.

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0 of 0 points

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Problem 1

What is the value printed by each of the program snippets below?
(If the snippet contains compilation error or runtime error or infinite loop, say Error. If the output is a garbage value, say GBG. If the output is in multiple lines, use # for the new line character. ex: if the output is:
x
y
z
i.e, each character in a different line, you should answer: x#y#z).

✓ 1.b.

```
int (*array_1)[5];
int array_2[5];
int *array_3[5];
printf("%d\n",sizeof(array_1));
printf("%d\n",sizeof(array_2));
printf("%d\n",sizeof(array_3));
```

8#20#40 ✓

✓ 1.c.

```
int (*array_1)[5];
int array_2[5];
int *array_3[5];
printf("%d\n",sizeof(array_1[0]));
printf("%d\n",sizeof(array_2[0]));
printf("%d\n",sizeof(array_3[0]));
```

20#4#8 ✓

✓ 1.d.

```
int arr[5] = {1,2,3,4,5};
arr++;
printf("%d\n",arr[0]);
```

Error ✓

✓ 1.e.

```
int num = 10;
int *p = NULL;
*p = num+1;
printf("%d",*p);
```

Error ✓

✓ 1.f. 1/1

```
int arr[5] = {1,2,-4,5,0};
printf("%ld",(arr+4)-arr+arr[4]-arr[0]);
```

3 ✓

✓ 1.g 1/1

```
int a[] = {10,20,30,40,50};
int b = a; int c = a+1;
printf("%d %d", c-b, (a+1)-(a));
```

4 1 ✓

Problem 2

The following code aims to calculate e^x for any non-negative integer x. Complete the code by filling in the blanks. The final result is to be printed upto two digits after the decimal place.

Fill (1),(2),(3),(4) blanks to complete the code so that it does the required task correctly.

```
#include<stdio.h>
int main()
{
        float e = 2.718282, s = _____(1)_____;
        int x;
        scanf("%d", &x);

        for (; x; _____(2)_____)
        {
                if (x%2) s*=e;
                _____(3)_____;
        }

        printf("_____(4)_____", s);


   return 0;
}
```

✓ (1)

1.0 ✓

✓ (2)

x-- ✓

Correct answers

x/=2

x=x/2

✓ (3)

else s*=e ✓

Correct answers

e*=e

e=e*e

✓ (4)

%.2f ✓

Problem 3 — 3 of 4 points

Choose if the following claims are true or false.

✓ 3.a. A recursive program can terminate without a base case. 1/1

- ○ True
- ◉ False ✓

✓ 3.b. A[1] returns the first element of the array A 1/1

- ○ True
- ◉ False ✓

✓ 3.c. A recursive function can make more than one call to itself and still work correctly. 1/1

- (●) True ✓
- ( ) False
- ( ) Option 3

✗ 3.d. All recursive programs can be implemented without recursion as well(by using loops). 0/1

- ( ) True
- (●) False ✗

Correct answer

- (●) True