Class Test

[SOA Deemed to be University, ITER]

Subject : PPWC (CSE-3544)

Date : 05/10/2024 Total : 15 Marks Time: 1hr.

Q1.

A. Design a program to display the count of each character in a string. For example: input string: biintu, output: The count of each character in the string biintu is b-1, i-2, n-1, t-1, u-1.

B. Given the string **pres** with the value **"Edison, Thomas Alva"** and two 40-character temporary variables, tmp1 and tmp2, what string is displayed by the following code fragment?

```
strncpy(tmp1, &pres[8], 5);
tmp1[5] = '\0';
strlwr(tmp1);
strrev(tmp1);
strncpy(tmp2, &pres[14], 4);
```

```
tmp2[4] = '\0';
strcat(tmp1, " ");
strcat(tmp1, tmp2);
printf("%s\n", tmp1);
```

C. Assume you have two strings. Design a program to concatenate two strings without library functions. The prototype of the functions to be used in your program is given as ***void concatenate(char str1[ ], char str2[ ]);***

Q2.

A. Develop a C program to intersperse the elements of two integer arrays into another array. Assume that **array1 is 5,7,4,5,8** and **array2 is 12,16,20,19,14**. The **resultant arra**y will be 5,12,7,16,4,20,5,19,8,14. Display all the arrays.

B. Trace the recursive function showing its parameter at each call for the following parameter at each call for the below code segment with its output.

```
void fun(int n)
{
   if(n>0) {
      fun(n-1);
      printf("%d",n);
      fun(n-1);
}
```

```
int main()
{
  fun(4);
  return 0;
}
```

C. Determine the expected display values at the printf statements for the given program segment.

```
int main() {
    int m1;
    int a = 10, b = 20, c = 30;
    m1 = a > b ? a : c > a ? c : b;
    display(m1);
    print("m1=%d\n", m1);
    return 0;
}

void display(int m1) {
    int n = 20;
    if (m1 == n) {
        print("%d\n", m1 >> 2);
    } else {
        print("%d\n", m1 * n);
    }
}
```

```
int main() {
   int a[4][5] = {
      {0, 9, 1, 7, 0},
      {6, 7, 8, 9, 10},
      {11, 12, 13, 14, 15},
      {22, 24, 26, 28, 30}
   };
   printf("%d%d" *(*(a+1)+3), a[2][2]);
   printf("%d%d" *(*(a+**a+2)+3), a[1+2][2*2]);
```

D. Write a C program for an automatic teller machine that dispenses money. The user should enter the amount desired (a multiple of 10 rupees i.e 10,50,100,1000 etc.) and the machine dispenses this amount using the least number of bills. The bills dispensed are 50s, 20s, and 10s. Write a user defined function with its prototype that will predict how many of each kind of bill to dispense.