



Date: 20/01/2023

Duration: 01 Hour

Max. Marks: 15

Important Instructions:

- All the questions are compulsory.
- Maximum marks and CO's for a particular question are indicated on the extreme right of the corresponding question within the brackets [ ] and CO's in ( ).

BT22CSE042

Q. No.	Questions	Marks COs
1.	Determine the output and Error of the following C programs.	[05] (CO1)
	<div>(a) <pre>int main(){     int m = 10;     int n, n1;     n = ++m;     n1 = m++;     n--;     --n1;     n-= n1;     printf ("%d",n);     return 0; }</pre></div> <div>(b) <pre>int jumble(int x, int y){     x=2*x+y;     return x; }  int main(){     int x=2, y=5;     y=jumble(y,x);     x=jumble(y,x);     printf("%d \n", x);     return 0; }</pre></div> <div>(c) <pre>int r(){     static int num=7;     return num--; }  int main(){     for(r();r();r())         printf("%d",r());     return 0; }</pre></div> <div>(d) <pre>void main(){     int arr[10];     func(arr); }  void func(int a[10]){     int b[10];     int x=5,y=4;     a=&amp;x; b=&amp;y; }  (e) <pre>int main(){     int x = f(5);     printf("%d", x);     return 0; }  int f(int n){     static int r=0;     if(n&lt;=0) return 1;     if(n&gt;3){         r=n;         return f(n-2)+2;     }     return f(n-1)+r; }</pre></pre></div>	
2.	a) Write down a C program to compute the GCD of two numbers using recursion.	[2.5] (CO2)
	b) Write a C program to find the second largest element in an array of 10 element using recursion.	[2.5] (CO2)

3.	<p>a) Given an array of N integers where each element represents the maximum length of the jump that can be made forward from that element. Write a C program to find the jumps to reach out the end of the array (starting from the first element). If an element is 0, then you cannot move through that element.</p> <p>For example:  Input: arr[] = {1, 3, 5, 8, 9, 2, 6, 7, 6, 8, 9}  Output: 3</p>	[2] (CO2)
	<p>b) Write a C program to find the sum of main and anti-diagonal elements of a square matrix.</p> <p>For example:  Matrix:  9 8 7  5 4 6  1 2 3  Sum of Main diagonal elements: 16  Sum of Opposite diagonal elements: 12</p>	[3] (CO2)