

**VIT**Vellore Institute of Technology
(Chartered as a University under section 3 of UGC Act, 1956)

REG.NO.: 228EC0091

SCHOOL OF ELECTRONICS ENGINEERING
CONTINUOUS ASSESSMENT TEST - I
WINTER SEMESTER 2024-2025

SLOT: C1

Programme Name & Branch : B.Tech. ECE
Course Code and Course Name : BECE320E - Embedded C Programming
Faculty Name(s) : Prof. Srinivasa Rao I + 5 faculty
Class Number(s) : VL2024250500681, 0684, 0690, 0692, 0694, 0696
Date of Examination : 29-01-2025
Exam Duration : 90 minutes **Maximum Marks: 50**

General instruction(s):

- Answer All Questions
- M - Max mark; CO - Course Outcome; BL - Blooms Taxonomy Level (1 - Remember, 2 - Understand, 3 - Apply, 4 - Analyse, 5 - Evaluate, 6 - Create)
- CO1 - Apply the C programming language for various data types and decision making applications.
- CO2 - Apply the knowledge of derived data types, pointers, and functions in C to write a program

Q. No	Question	M	CO	BL
1.	Apply your knowledge of C programming to determine the output of the following code snippets when executed. They are part of a valid C program, including the necessary headers and the main() function. (2 Marks each) (i) <code>int x = 2; printf("%d", (x < 1) + (x > 1));</code> (ii) <code>int a=0, b = 1, c = 2; a = b+++ ++c; printf(" %d %d %d ", a, b, c);</code> (iii) <code>for (int i = 4; i < 13; i += 4) { printf(" %d", i); ++i; }</code> (iv) <code>char b='A', c=100; printf(" %d \n %d ", b, c);</code> (v) <code>int i, a = 5; i=1,8; while (++i <= 8) a++; printf("%d", a);</code>	10	1	3
2.	Identify and correct the errors in the following C programs. Rewrite the programs after making the necessary corrections. (5 Marks each) (i). //The following program prints the //sum of digits of an integer <code>int main() { int num1, i,num2,sum; printf("Enter a number : "); scanf("%d", num1);</code> (ii). //The following program finds the //largest number in the array <code>#include <stdio.h>; int main() { int a[]={1,6,4,1,4},G; for(i=1, i<5, i++)</code>	10	1	3



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	<pre>while(num1>0) { num2=num1/10; num1=num1%10; sum=sum+num2; printf("%d ", sum); } return 0; }</pre>	<pre>{ if(G>a[i]) G=a[i]; } printf("The largest number is %d ", G); return 0; }</pre>			
3.	Develop a C program to calculate and display the electricity bill based on usage - Up to 100 units: ₹1/unit 101-300 units: ₹2/unit - Above 300 units: ₹3/unit If the bill amount is more than ₹500 then add a surcharge of 10% to the total bill and the minimum bill should be of ₹100. Test case : Input : Enter no. of units consumed : 250 Expected Output: Total bill amount ₹500		10	1	3
4.	Design a C program that displays a number pattern for n rows. The pattern should start with the number 1, and each row must begin and end with 1. All other numbers in the row should follow a consecutive sequence starting from 1 for the first row, increasing as the rows progress. Test case - Input : 4 Expected output : <pre>1 121 12321 1234321</pre>		10	1	3
5.	Construct a C program to merge two arrays of different sizes and sort the merged array in ascending order (Take array elements from the user input).		10	2	3
