



VIT

Vellore Institute of Technology
(Deemed to be University under section 3 of UG Act, 1956)

REG.NO. [REDACTED]

SCHOOL OF ELECTRONICS ENGINEERING
CONTINUOUS ASSESSMENT TEST - I
FALL SEMESTER 2026-2027

SLOT: D1

Programme Name & Branch : B.Tech. ECE
Course Code and Course Name : BAECE204 – Microcontrollers & Embedded C Programming
Faculty Name(s) : Prof. Gerardine Immaculate Mary+ 4 faculty
Class Number(s) : VL2026270100844, 3636, 0854, 0848, 0852
Date of Examination : 12-08-2026
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 - Interpret the concepts of C programming in microcontroller applications.
- CO2 – Illustrate the architecture and programming structures of the 8051 microcontroller

Q. No	Question	M	CO	BL
1a	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. (2.5 Marks each)			
	a. <pre>int i=1, j=1; while(i<=3) j+=i++; printf("%d %d",i,j);</pre> b. <pre>int i; for(i=1;i<=3;i++) if(i%2) printf("A"); else printf("B"); printf("C");</pre>			
1b.	Identify and correct the errors in the following C programs. Rewrite the programs after making the necessary corrections without changing the logic. (5 Marks)			
	(i). //The following program prints if the //given number is Palindrome or not <pre>#include<stdio.h> int main();{ int n=121,rev=0,r,temp; while(n>0) { r=n/10; rev=rev+r; n=n%10; } if(temp==rev) printf("Palindrome"); else printf("Not"); return 0; }</pre>	10	1	3



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2.	Write a C program to simulate an ATM using switch-case. Menu: 1. Deposit 2. Withdraw 3. Balance Enquiry 4. Change PIN 5. Exit Assume the initial balance is ₹10,000 and the default PIN is 1234. Verify the PIN before allowing any transaction. Withdrawal should maintain a minimum balance of ₹2,000. Display appropriate error messages for invalid PIN, insufficient balance, and invalid menu choice.	10	1	3										
3.	Implement a C program to read N integers into an array and find the frequency of each element without using a separate frequency array. Example: Input: 2 5 2 8 5 2 Output: 2 occurs 3 times 5 occurs 2 times 8 occurs 1 time	10	1	3										
4.	Apply string handling techniques to develop a C program that reads N names and arranges them in alphabetical order. Example: Input: Ravi Arun Kiran Bala Output: Arun Bala Kiran Ravi	10	1	3										
5.	Four switches are connected to Port 0 and LEDs to Port 2. Develop an 8051 C program with the following operations: <table><thead><tr><th>Switch Input</th><th>LED Output</th></tr></thead><tbody><tr><td>0001</td><td>All LEDs ON</td></tr><tr><td>0010</td><td>Running LEDs ON</td></tr><tr><td>0100</td><td>Alternate LEDs ON</td></tr><tr><td>1000</td><td>Blink All LEDs</td></tr></tbody></table>	Switch Input	LED Output	0001	All LEDs ON	0010	Running LEDs ON	0100	Alternate LEDs ON	1000	Blink All LEDs	10	2	3
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