

JK Lakshmipat University Jaipur

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination, May 2024

B. Tech. in CSE, Semester II

Roll No.....

CS1135: Programming II (C)

Time: 2.5 hours

Max. Marks: 30

Instructions to students:

1. All Programs are compiled and run in Linux GCC 64-bit compiler.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.
4. Do not hardcode the C programs. User input must be there in all the programs.

Q.1A	What will be the error/output of the following C codes?			03 Marks CO1, CO3
	a) #include <stdio.h> int main() { int x = 5, y = 0, z; z = x / y; printf("The value of z is: %d\n", z); return 0; }	b) #include <stdio.h> int main() { int x = 10; int *ptr1, *ptr2; ptr1 = &x; ptr2 = ptr1; *ptr2 = 20; printf("The value of x is: %d\n", x); return 0; }	c) #include <stdio.h> void fun(int x) { x = 30; } int main() { int y = 20; fun(y); printf("%d", y); return 0; }	
Q.1B	Discuss the differences between local variables, global variables, and static variables in terms of scope and lifetime in C programming?			
OR				
Q.1C	Explain the difference between malloc , calloc , and realloc functions in C for dynamic memory allocation with example. When would you use each of these functions?			03 Marks CO3
Q.2A	Write a program that reads integers from a file named "input.txt" and calculates their sum. Assume that the file contains one integer per line.			04 Marks CO4, CO2
Q.2B	Define a structure named Employee with the following members: emp_id (integer), emp_name (string of maximum 50 characters), emp_position (string of maximum 50 characters), emp_salary (float). Write a program that performs the following tasks: 1) Declare an array of 5 Employee structures. 2) Input details (ID, name, position, salary) of 5 employees from the user and store them in the array of structures.			04 Marks CO5

	3) Display the details of the employee with the highest salary. 4) Using function, Calculate and display the total salary of all employees.	
Q.3A	Write a program in C to get the Second largest and second smallest element of an array size of 10 using user-defined function.	04 Marks CO3, CO4
Q.3B	Write a program in C that calculates the length of a string using pointers and a function, where the user inputs the string?	04 Marks CO3
Q.4A	Write a C program to find the GCD (Greatest Common Divisor) of two numbers using recursion.	04 Marks CO2
Q.4B	A grocery store calculates the bill amount based on the items purchased by a customer. The prices of the items are as follows: • Apples: Rs. 50 per kg • Bananas: Rs. 40 per kg • Oranges: Rs. 60 per kg • Grapes: Rs. 80 per kg Write a C program to read the name of the customer, the quantities of each item purchased (in kg), and The store also charges a packing fee of Rs. 20 for every transaction. Define a function to calculate the bill amount, and a display function to print out the bill details.	04 Marks CO4

*****All The Best*****