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Bengaluru

Mid Term Examinations - October 2026

Date: 05/10/2026 **Time:** 09:30 AM - 11:00 AM

Course Code: CSS2280 **Course Name:** C Programming and Data Structures

Semester: Third Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2
Marks	92	88

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	Write the syntax of a for loop and give a simple example.	2	CO1	BT1
2	Write a C program to check whether a given number is even or odd using if-else.	2	CO1	BT2
3	Explain recursive functions in C. Discuss the concept of recursion and illustrate it with a suitable example.	2	CO1	BT2
4	What is the difference between LIFO and FIFO?	2	CO2	BT2
5	What is the difference between primitive and non-primitive data structures?	2	CO2	BT2

PART B : Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
6	Explain the different types of operators in C. Discuss arithmetic, relational, logical, assignment and conditional operators with examples.	10	CO1	BT2
7	Alice has scored X marks in her test and Bob has scored Y marks in the same test. Alice is happy if she scored at least twice the marks of Bob's score. Write a program to read their test scores and print "yes" is Alice is happy. Or Print "No" otherwise.	10	CO1	BT3

PART C: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
8	Write a C program to dynamically allocate memory for N integers using malloc(). Read the integers from the user, display the entered integers, and release the allocated memory using free().	10	CO1	BT3
9	Explain structure declaration, initialization, and accessing structure members in C. Write a C program for structure reading and printing to read and display the details of a student.	10	CO1	BT3

PART D: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
10	Explain the algorithm for converting an infix expression into a postfix expression using a stack. Convert the following expression into postfix notation, showing the stack and output at each step: A + B * C - D / E.	10	CO2	BT3

11	Write C functions to implement the following stack operations using an array: a) push() – to insert an element into the stack. b) pop() – to delete an element from the stack. c) peek() – to display the top element of the stack. d) display() – to display all the elements of the stack	10	CO2	BT3

PART E: Answer Any 1 Following Questions. 10 M				
Q.N.	**Questions**	**M**	**CO**	**BT**
12	Discuss the different types of data structures in detail. Explain the classification of data structures into primitive and non-primitive, and further classify non-primitive data structures into linear and non-linear data structures with suitable examples.	10	CO2	BT2
13	Explain the following queue operations using an array with suitable algorithms: a) Enqueue() – to insert an element into the queue. b) Dequeue() – to delete an element from the queue.	10	CO2	BT3