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**ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)****B.E / B. Tech (Full Time) END SEMESTER EXAMINATIONS – APRIL / MAY 2025****COMPUTER SCIENCE AND ENGINEERING****Semester I****CS6101 & PROGRAMMING WITH C****(Regulation 2018)**

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

**PART – A (10x2=20 Marks)**

Q. No	Questions
1.	What are the Preprocessor directives?
2.	What are the differences between '++a' and 'a++'?
3.	List the different datatypes with its size and range of values in 'C'.
4.	What is the output of the given program? <pre>#include &lt;stdio.h&gt; void main() { int a=30, b=10, c=15, d=5;   int e;   e= a+b*c / d;   printf("Output=%d\n",e); }</pre>
5.	List any four functions that are performed on characters.
6.	Show how for loop is used in a 'C' program, with example.
7.	What is the output of the following program? <pre># include &lt;stdio.h&gt; void main() { char *p;   p="UNIVERSITY";   printf("%d", *&amp;p); }</pre>
8.	How do you declare arrays in 'C' programming?
9.	What is the use of structures 'C'.
10.	Distinguish between an Structures and Unions.

**PART – B (8 x 8 = 64 marks)****(Answer any 8 questions)**

Q. No	Questions	Marks
11.	Write a 'C' program to find the factorial of a number using recursion.	8
12.	Write a program in 'C' using functions to swap two numbers with global variables and call by reference.	8
13.	Explain different types of loops in 'C' with syntax and examples.	8
14.	Explain how a single dimension and two dimension arrays are declared and initialized?	8

15.	What is function? Explain different classification of user defined functions based on types of arguments and return type with examples.	8
16.	Explain string manipulation library functions with their syntaxes. Write a program to count the number of vowels in a string.	8
17.	Write a 'C' program using function to check whether the given number is 'Prime' or not.	8
18.	Write an algorithm and develop a 'C' program to search an integer N in an array using binary searching technique	8
19.	Write a program in 'C' to find the sum and mean of all elements in an array using pointers.	8
20.	Write a 'C' program to create a text file, store and retrieve text from the file.	8
21.	Write a 'C' program using structures to read, write, compute average - marks and display the students scoring above and below the average marks for a class of N students.	8
22.	Write a 'C' program to print the product of given two matrices.	8

**PART-C(2x8=16marks)**

**Answer all the questions**

Q. No	Questions	Marks
23.	An electricity board charges the following rates for the use of electricity: for the first 200 units 80 paise per unit: for the next 100 units 90 paise per unit: beyond 300 units Rs 1 per unit. All users are charged a minimum of Rs. 100 as meter charge. If the total amount is more than Rs 400, then an additional surcharge of 15% of total amount is charged. Write a 'C' program to read the name of the user, number of units consumed and print out the charges.	8
24.	Write an algorithm and develop a 'C' program that reads N integer numbers and arrange them in ascending order using selection Sort.	8

