С		Reg. No. :											
Question Paper Code : R1207													
B.E./B.Tech. DEGREE EXAMINATION, NOV 2024													
	First Semester												
	Computer Science and Engineering												
R21UCS107- PROBLEM SOLVING AND C PROGRAMMING													
(Common to ECE, IT, CSBS, AI&DS, CSD, CSE(AIML), IOT & CYBER SECURITY)													
(Regulations R2021)													
Dura	ation: Three hours							Ma	ximu	ım: 1	00 N	Mark	S
Answer All Questions													
PART A - $(5 \times 1 = 5 \text{ Marks})$													
1.	Identify the Valid Identifier? CO1									1- U			
	a) @@@123	b) @123		c)_	123\$				d) K	Keyw	ord		
2.	keyword transfers control to a labeled statemer							?				CO	1- U
	(a) goto	(b) break		(c)	auto			(d) co	ontinu	ue		
3.	In an array x[10], t	he x represents the	?									CO	1- U
	(a) base address	(b) base value	(0	c) void	pointe	ers		(d	l) No	ne o	f the	aboy	ve
4.	What will be the output of the following C program?										С	04-	App
	<pre>#include <stdio.h> int add(int a, int b) return a + b; } void main() { int result = add(5, 3 printf("%d\n", resu }</stdio.h></pre>	{ 3); 1lt);											
	(a) 8	(b) 53		(c) (Compi	iler E	rror		(d) don	le		

Whi	ich of the follo	CO1- U										
(a)	structure	(d) All of the above										
PART - B (5 x 3 = 15 Marks)												
Writ	te the differenc	CO1- U										
Writ	te the syntax fo	CO3- App										
Wri	te a C program	CO1- U										
Wri	te a C prograr	CO4- App										
Defi	ine malloc() in	CO1- U										
$PART - C (5 \times 16 = 80 \text{ Marks})$												
(a)	(i) Write a P	seudo code to perform	basic arithmetic operations.	CO2- App	(8)							
		CO2- App	(8)									
	J											
(b)			ntegers value from the user	CO2- App	(8)							
	(ii) Draw a f	lowchart and Write a C	C Program to find the biggest	CO2- App	(8)							
(a)			CO3- App	(8)								
	(ii) Write a	C program to print the nile and for loop staten	ne numbers from 1 to 5 using	CO3- App	(8)							
(b)	(i) Write a (bether the number is Prime or	CO3- App	(8)							
(0)			netier the number is rinne or	CO3 11pp	(0)							
			e numbers in Fibonacci Series	CO3- App	(8)							
(a)	(i) Write a C	Program to print the e	elements of 2D-array	CO4- App	(8)							
(u)	(ii) Write a	C program Find the	•		(8)							
	using sumg	Or										
(b)		ogram to take 5 string f		CO4- App	(16)							
	 (a) Writh Writh Writh Writh Writh Independent of the second secon	 (a) structure Write the difference Write the syntax for Write a C program Write a C program Write a C program (a) (i) Write a P (ii) Write a define keyweight (b) (i) Write a C and print the (ii) Draw a for of three num (a) (i) Write a determine with (ii) Write a determine with (ii) Write a while, do-while, do-whil	 (a) structure (b) string PART – B Write the differences between an algorithm Write the syntax for SWITCH statement. Write a C program to get a string and print Write a C program to add two numbers Define malloc() in C. PART – C (a) (i) Write a Pseudo code to perform (ii) Write a C program to find the define keyword for declaration of F (b) (i) Write a C program to get the 2 i and print the same value (ii) Draw a flowchart and Write a C of three numbers (a) (i) Write a C program to read determine whether he is eligible to (ii) Write a C program to print the while, do-while and for loop statem Or (b) (i) Write a C program to Check w not using do-while loop. (ii) Write a C program to print the using a while loop. (a) (i) Write a C program to print the using a while loop. (b) (i) Write a C program to print the using String Functions 	PART - B (5 x 3 = 15 Marks) Write the differences between an algorithm and a flowchart.? Write the syntax for SWITCH statement. Write a C program to get a string and print the string. Write a C program to add two numbers without using return type. Define malloc() in C. $PART - C (5 x 16 = 80 Marks)$ (a) (i) Write a Pseudo code to perform basic arithmetic operations. (ii) Write a C program to find the area of the circle using the define keyword for declaration of PI value Or (b) (i) Write a C program to get the 2 integers value from the user and print the same value (ii) Draw a flowchart and Write a C Program to find the biggest of three numbers (a) (i) Write a C program to read the age of a candidate and determine whether he is eligible to cast his/her own vote. (ii) Write a C program to Check whether the number is Prime or not using do-while loop. (ii) Write a C program to print the numbers in Fibonacci Series using a while loop. (i) Write a C program to print the clements of 2D-array (ii) Write a C program Find the Length and size of the String using String Functions Or	(a) structure(b) string(c) array(d) All of the a PART - B (5 x 3= 15 Marks)Write the differences between an algorithm and a flowchart.?CO1- Write the syntax for SWITCH statement.CO3- CO3-Write a C program to get a string and print the string.CO1- 							

14. (a) (i) Write a C program to find the Factorial of a given number CO4- App (8) using recursion in C.
(ii) Write a C program to calculate the area of the square using CO4- App (8) functions.

Or

- (b) Write a C program to swap two numbers using pass by value and CO4- App (16) pass by reference.
- 15. (a) Create a Union called Book to store information about a book. The CO4- App (16) Union should include the following members: title: A character array to store the book's title author: A character array to store the book's author isbn: An integer representing the book's ISBN numberOfPages: An integer representing the book's number of pages

Or

- (b) Create a C programming using an Structure called Student with name, CO4- App (16) class, rollnum, total marks as members. Find and display the grade of each student.
 >80 Grade A
 - >60 Grade B
 - > 50 Grade C

<50 - Fail

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