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Paper Id: 110265

Sub Code: KCS 201

Roll No.

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**B. TECH**  
**(SEM II) THEORY EXAMINATION 2018-19**  
**PROGRAMMING FOR PROBLEM SOLVING**

**Time: 3 Hours****Total Marks: 100****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.**

		Marks	CO
a.	What is the difference between .obj and .exe files in C?	2	2
b.	List the components of C language.	2	1
c.	Differentiate assignment and equality operators in C.	2	1
d.	Correlate else if ladder and switch case statement.	2	3
e.	Differentiate while and do while loop.	2	3
f.	Differentiate recursion and iteration.	2	3
g.	Explain the significance of null character in string.	2	5
h.	Differentiate linear and binary search.	2	4
i.	Differentiate static and dynamic memory allocation.	2	5
j.	Define the structure of a node in linked list.	2	5

**SECTION B****2. Attempt any three of the following:**

		Marks	CO
a.	Draw the block diagram of a computer system. Explain its different components with suitable example.	10	1
b.	Differentiate operator precedence and associativity. Write a program in C to elaborate the use of logical AND and logical OR operators in C.	10	1
c.	What is the use of break statement in loops? Write a program in C using while loop to elaborate the use of break statement.	10	3
d.	Write a program in C to input two 3x3 matrix from the user and print multiplication as the result in matrix form. (Write comments also at appropriate places in the program)	10	3
e.	Explain the importance of pointers in C. Write a program in C to swap the values of two numbers entered by user using function call by reference method.	10	4

**SECTION C****3. Attempt any one part of the following:**

		Marks	CO
a.	Write an algorithm and draw a flowchart to find the sum of digits of an integer number entered by the user.	10	2
b.	Write an algorithm and draw a flowchart to reverse an integer number entered by the user.	10	2

**4. Attempt any one part of the following:**

	<b>Marks</b>	<b>CO</b>
a. Define the term mixed operands in an arithmetic expression with few examples. Write a program in C to elaborate the use of type casting.	<b>10</b>	<b>1</b>
b. Explain the use of default in switch statement. Write a program that takes two operands and one operator from the user and perform the operation and prints the result by using switch statement.	<b>10</b>	<b>3</b>

**5. Attempt any one part of the following:**

	<b>Marks</b>	<b>CO</b>
a. Write a program in C to print following pattern with appropriate comments: 10 9 8 7 6 5 4 3 2 1	<b>10</b>	<b>3</b>
b. Discuss the concept of assembler. Explain compiler, interpreter, loader and linker with example.	<b>10</b>	<b>3</b>

**6. Attempt any one part of the following:**

	<b>Marks</b>	<b>CO</b>
a. Write the importance of sorting in problem solving. Write a program in C using bubble sort technique to sort 10 numbers entered by the user.	<b>10</b>	<b>4</b>
b. Explain the importance of structure in C programming. Write a program in C using structure to enter and print the record of 10 books available in your library. Following fields may be included in the record: - book_title, book_price and number_of_pages.	<b>10</b>	<b>5</b>

**7. Attempt any one part of the following:**

	<b>Marks</b>	<b>CO</b>
a. Define various file operations in C. Write a program in C to count and print the number of characters in a file.	<b>10</b>	<b>5</b>
b. Explain the following: (i) Macros. (ii) Union (iii) Enumerated data types (iv) Type conversion	<b>10</b>	<b>5</b>