GUJARAT TECHNOLOGICAL UNIVERSITY
SPFU - SEMESTER– 1ˢᵗ / 2ⁿᵈEXAMINATION – SUMMER 2018

Subject Code: CPU002   **Date: 19/05/2018**
Subject Name: Computer Programming and Utilization-2
Time:02:30 pm to 05:00 pm   **Total Marks: 70**
Instructions:
1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	What is Recursion? Write a C program in which a 5 digit positive integer is entered through keyboard; write a function to calculate the sum of digits of the 5 digit number with using recursion.	**07**
	(b)	What is pointer? Give its benefits and write a program using pointer and function to determine the length of string.	**07**
Q.2	**(a)**	Write a C function to exchange two numbers and use it to reverse an array of 10 integers accepted from user.	**07**
	(b)	What is structure and union? How does a structure differ from an array? How is an array of structure initialized?	**07**
Q.3	**(a)**	How to initialize Pointer? Explain arrays of Pointer using suitable sample program.	**07**
	(b)	Using structure write a C program: Define a structure student_record to contain name, branch and entry year. Read this information from keyboard and print the same on screen.	**07**
Q.4	**(a)**	What is Dynamic Memory Allocation? Compare: Static Memory Allocation Vs. Dynamic Memory Allocation.	**07**
	(b)	What is file? Briefly Explain different file management functions in C.	**07**
Q.5	**(a)**	Explain the use of malloac and calloc function with sample program.	**07**
	(b)	Write a program to read a string from file and print on screen.	**07**
Q.6	**(a)**	Write a function program to find whether the string is palindrome or not.	**07**
	(b)	Describe variable declaration in structure and accessing members of structure.	**07**
Q.7	**(a)**	Explain use of macros and preprocessing elements in C programming with examples.	**07**
	(b)	Explain various categories of functions with suitable example.	**07**

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