

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
SPFU - SEMESTER- 1<sup>st</sup> / 2<sup>nd</sup> EXAMINATION – 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 malloc 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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