

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER- 1<sup>st</sup> / 2<sup>nd</sup> • EXAMINATION – WINTER 2013**

**Subject Code: 110003****Date: 27-12-2013****Subject Name: Computer Programming and Utilization****Time: 10:30 am – 01:00 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) Draw block diagram of a Computer. Explain the function of each block. 07  
 (b) Explain various symbols used in a flowchart. Draw a flowchart to read 10 integers and find and print the sum of these integers. 07
- Q.2 (a) Explain: Software, Hardware, Higher level Language and Compiler. 07  
 (b) State the important features of C language. 07  
 Also, explain the basic structure of a C program.  
 OR
- (b) Write a program in C for finding sum of 1 to k. 07  
 The number k should be read from the keyboard using scanf().
- Q.3 (a) Explain arithmetic, relational and logical operators used in C Language 07  
 (b) Write a C program to find and print prime numbers between the numbers 1 to n, where the number n should be read from the keyboard. 07  
 OR
- Q.3 (a) Compare while loop and for loop with illustrations. 07  
 (b) A and B are two n X n matrices. 07  
 Write a C program to read both A and B matrices, add them and print the resultant C matrix. The maximum value n may be taken as 9.
- Q.4 (a) Describe following string functions in C-Language. 07  
 (1) strcpy ( ) (2) strcat ( ) (3) strcmp ( )  
 (b) Write a program to that read two strings and concatenate them using appropriate string function and print the resulting string. 07
- Q.5 (a) What are advantages of user defined functions? 07  
 Explain in this context with examples (i) function prototype (ii) call by value  
 (b) Write a C program to find factorial of n using recursive use of functions. 07
- Q.6 (a) What is a "structure" in C? Write a program which declares a structure named "student" with roll\_no, name, address and marks[5]. The structural element marks should be an array to store marks in each of the five subjects. The program then should read and print data for n student using proper format. 07  
 (b) What are pointers in C? Give their benefits. Write a program to read integer numbers in an m[10] array, and print the elements of this array using pointers. 07
- Q.7 (a) Explain showing proper syntax, following file operations: 07  
 fprintf() (ii) fscanf() (iii) putc() (iv) getc()  
 (b) Write a program to read merit marks of 100 students from keyboard in an m[100] array, and store this m array on DATA file, and to read these marks from the DATA file and display them on the monitor. 07

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