GUJARAT TECHNOLOGICAL UNIVERSITY
B.E. Sem- 1st Regular Examination January 2011

Subject code: 110003
Subject Name: Computer Programming & Utilization.

Date: 05/ 01 /2011   **Time: 10.30 am - 01.00 pm**
Total Marks: 70

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Explain the 'C' Development life cycle using flowchart in detail.   **06**
     (b) Explain the storage class specifiers in C.   **04**
     (c) Write an algorithm to find out factorial of given numbers and draw a flowchart of it.   **04**

Q.2 **(a)** What are trigraph characters? How are they useful? Explain any five of them.   **05**
     (b) Explain the classification of operators in C in brief.   **07**

OR

     (b) What is type conversion? Explain the type conversions supported by C language.   **07**
     (c) What will be the output of following program?   **02**

```
main()
{
    int x = 10, y, z;
    z = y = x ;
    y - = x-- ;
    z - = --x ;
    x - = --x – x-- ;
    printf(' y = %d z = %d x = %d ' , y, z, x) ;
}
```

Q.3 **(a)** Write a C program to determine a given number is 'odd' or 'even' and print the following message   **05**
NUMBER IS EVEN
Or
NUMBER IS ODD
(i) Without using else option. (ii) With else option.
     (b) Explain the break and continue statements using suitable example.   **05**
     (c) Explain getchar() and gets() functions with suitable example.   **04**

OR

Q.3 **(a)** Write a C program to evaluate the square root for five numbers using the goto statement.   **05**
     (b) Write the basic differences between the while loop and do-while loop with suitable example.   **05**
     (c) Explain putchar() and puts() functions with suitable example.   **04**

Q.4 **(a)** 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.   **05**
     (b) Differentiate Structures and Unions with example.   **05**
     (c) Explain Dynamic Memory Allocation functions with syntax.   **04**

OR

Q.4	**(a)**	Explain the various types of function calls in C.	**05**
	(b)	Explain the various ways to access the structure members with proper syntax in C language.	**05**
	(c)	List the advantages and limitations of Array in C.	**04**

| **Q.5** | **(a)** | State the benefits of object oriented programming over procedure oriented programming. | **07** |
| | **(b)** | What is inline function? How it is different than the macros? Write a simple C++ program which shows the difference between them. | **07** |

OR

| **Q.5** | **(a)** | What is constructor function? List the at least five characteristics of constructor function. | **07** |
| | **(b)** | What is friend function? Write simple C++ program which shows that friend function as a bridge between classes. | **07** |

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