

**GUJARAT TECHNOLOGICAL UNIVERSITY****B.E. Sem-II Remedial Examination September 2009****Subject code: 110003****Subject Name: Computer Programming and Utilization****Date: 08/09/2009****Time: 03:00pm - 5:30pm****Total Marks: 70****Instructions:**

1. Write seat no. and enrolment no. at given location on question paper.
2. Attempt all questions.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.

- Q.1** (a) Draw Block Diagram of Computer System and Explain its various components. **04**
- (b) Explain Various Symbol used in Flowchart and Draw the Flowchart for finding largest Number out of three given Numbers. **05**
- (c) Write a program in C for generating sum of first 100 integer numbers **05**
- Q.2** (a) (1) Explain scanf( ) and printf( ) with syntax. **03**  
 (2) Create a class rectangle and write program in C++ to print area of rectangle. **04**
- (b) (1) Explain local variable Vs Global Variable using example. **03**  
 (2) Explain different datatypes used in C Language . **04**
- OR**
- (b) (1) Give name of loop statements. Explain any one loop statement with example **03**  
 (2) Explain different operators used in C Language **04**
- Q.3** (a) What is array? What are the advantages to use array? Explain single and multi-dimensional array with example. **05**
- (b) Write a program in C to sort N integer Numbers in ascending orders. **05**
- (c) Compare : C Language and C++ Language. **04**
- OR**
- Q.3** (a) What is structure? How it is different from union? **05**  
 Explain nested structure and array of structure with example.
- (b) Write a program in C to reverse the input string. **05**
- (c) Describe following string functions in C-Language. **04**  
 (1) strcpy( ) (2) strcat( ) (3) strlen( ) (4) strcmp( )
- Q.4** (a) What is pointer? How Pointer is initialized? How it is different to array? **07**  
 Explain (\*p)[5] and \*p[5].
- (b) Compare : Static Memory Allocation Vs. Dynamic Memory Allocation. **07**
- OR**
- Q.4** (a) What is constructor? What is destructor? Explain it with example. Also Give some of the special properties of constructor and destructor. **05**

- (b) Create a class named student having data member student name, roll no. and four subject marks. Write a member function to **05**  
(1) Input student name, roll no. and marks of subjects  
(2) Calculate percentage  
(3) Display all information.
- (c) Explain following Object Oriented Programming Terms in detail. **04**  
1) Data Abstraction 2) Polymorphism
- Q.5** (a) What is function? Explain “Pass by value “and “Pass by reference”. **05**  
Give one-one example of User Defined Function and Library Function.
- (b) Find the smallest number from the two numbers with the help of class & object. **05**
- (c) What is recursion? Explain it with factorial(4). Write C program to find factorial (N) using recursive Function? **04**
- OR**
- Q.5** (a) Explain if .. else and switch –case statement with example. **05**
- (b) Write a program in C to count number of positive , negative and zero elements from 3 x 3 matrix. **05**
- (c) Give example of friend classes/functions in C++. **04**

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