Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.E Sem-I/II Examination June-July 2011

Subject code: 110003   Subj.Name: Computer Programming & Utilization
Date: 23/6/2011   Total Marks: 70   Time: 10:30 am to 1:00pm

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

Q.1 (a) Draw a flowchart to count odd numbers and making their total from given N numbers. **08**

(b) Give the output of the following code. Give the explanation for the output. **06**

```
1.  int x = 10;
    void main()
    {
       int x = 15,y;
       y = x++;
       printf("%d %d",++y, x++);
    }
2.  void main()
    {
       int x[] = {1,2,3,4,5};
       printf("%d",fun(&x[2]));
    }
    int fun(int *a)
    {
       int i=0,sum=0;
       for(i=0;i<2;i++,a++)
          sum += *a;
       return(sum);
    }
3.  int i;
    for(i=5;i<15;i++) {
     printf("%d\n",i);
     i = i – 1;
    }
```

Q.2 (a) Answer the following questions. **07**
1. Define an array of 10 integer pointers.
2. Define an array of structure with integer, string and float as members. Size of array is 10.
3. Give a prototype of function accepting an integer pointer and a float as arguments and returns nothing.
4. How can you define infinite loop using while?
5. Give the meaning of
   int (*f)(int,int)   and   int *f(int,int);
6. Justify, "C is middle level language.
7. How can you allocate memory dynamically for 10 floating point numbers?

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(b) What is looping? Explain different types of loops in C and compare them. Show how to sum 1 to 10 using each of these loops.   **07**

OR

(b) What is structure? How can we access structure members? Clear use of nested structure using example. Compare structure with union.   **07**

Q.3 **(a)** Write a C program to print multiple of N from given range of unsigned integers. For example, if N=5 and range is   [17, 45] it prints 20,25,30,35,40,45.   **07**

(b) Compare following.   **07**
1. Software and hardware
2. Object and Procedure oriented programming

OR

Q.3 **(a)** Write a C program to accept a string and print every third character from string only if it is lower case.   **07**

(b) Explain the multiple if (ladder if) with example. Give the example using it.   **07**

Q.4 **(a)** Write a C function to exchange two numbers and use it to reverse an array of 10 integers accepted from user.   **07**

(b) Explain following with example w. r. to C++.   **07**
1. new operator
2. parameterized constructor

OR

Q.4 **(a)** Write a C function to reverse a word. Use it to reverse each word of a string given by user.   **07**

(b) Explain following with example w. r. to C++.   **07**
1. Copy constructor
2. Static data member and static function member

Q.5 **(a)** Explain the concept of call by reference and return by reference with proper example.   **07**

(b) Define a class to represent employee with id, name and salary with necessary constructors. Class should support method maxSAL() to give larger salary from two objects. Write a C++ program which accepts details of 10 employees and print employee whose salary is highest using maxSAL() method.   **07**

OR

Q.5 **(a)** What are default arguments? Demonstrate its use with proper example.   **07**

(b) Define a point class with x and y coordinates with necessary constructors. Provide a friend function to add two point objects. Write main() to demonstrate its use.   **07**

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