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

(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);
7. How can you allocate memory dynamically for 10 floating point numbers?
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.

OR

What is structure? How can we access structure members? Clear use of nested structure using example. Compare structure with union.

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.
(b) Compare following.
   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.
(b) Explain the multiple if (ladder if) with example. Give the example using it.

Q.4 (a) Write a C function to exchange two numbers and use it to reverse an array of 10 integers accepted from user.
(b) Explain following with example w. r. to C++.
   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.
(b) Explain following with example w. r. to C++.
   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.
(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.

OR

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