B.E. 2nd Semester Examination, 2006i*-
(CST Introduction to Computing 1201)

F.M: 35   Time: 2 hrs.

Attempt question no. 1 and any FIVE from the rest.

1. Answer any five questions.   (10)
    a) Convert the following:-
    i) $(27)_{io} = (?)_2$
    ii) $(01101011)_2 = (?)_{ie}$
    b)   Write any two major functions of an Operating System.
    c)   Mention some demerits of Assembly language program.
    d)   What do you mean by a Recursive Function?
    e)   What is the difference between a structure and an array?
    f)   Subtract $(01001)_i$ from $(10101)_2$ using complementary method.
    g)   Name four basic data types in C.
    h)   What is the difference between auto and static storage class?

2. a) Write a recursive function to compute the factorial of a positive integer n.   (3)
    b) Work out how the function works for n = 5.   (2)

3. a) What do you mean by scope of a variable?   (1)
    b) What is a pointer variable? Explain with a simple example that using pointer
    variables a function can return more than one value.   (1+3)

4. a) What is function prototype? What is its purpose?   (1+1)
    b) Write a function that returns the maximum of any two numbers. And hence
    write a program that will access the above function to find out the largest of any
    three numbers.   (3)
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5. a) What are the purposes of continue and break statements?   (2)
    b) Draw a flowchart and then using the same logic write a program to compute
    the G.C.D (greatest common divisor) of any two positive integers.   (3)

6. Declare a structure with following members and find its size in bytes.   (2+1+2)
        student roll number, student name, student marks. Write a
    program tq get the inputs from the user for each member.

7. Write a program (or an algorithm) to arrange any N numbers in ascending order.
    Explain how your program works when 3, 1, 4, 2 are given as input.   (3+2)

8. Write short notes on any two of the following.   (5)
        a) Relational and logical Operators,
        b) Memory allocation
        c) Operations on Pointers

9. What will be the output of the following programs? (any two)　　-　　　　　　　　(5)

i)　　　　#include<stdio.h> -main () {
　　　　int i, j, x = 0; for (i = 0; i < 4; i
　　　　++) for(j = 0;j <i;j ++)　　{ x
　　　　+= (i + j - 1) ;　.
　　　　　} printf("\nx
　　　=

ii)　　　　#include<stdio.h>
　　　　 main() {
　　　　　　inti,j,k, x = 0; for (i = 0; i
　　　　　　< 4; i + +) for(j =
　　　　　　0 ; j < i ; j + +) switch (i + j
　　　　　　■*-1) { case -1: case 0:
　　　　　　　x + =1;
　　　　　　　break;
　　　　　　　case 1:
　　　　　　　case 2:
　　　　　　　case 3:　　　　_____
　　　　　　　　　　x
　　　　　　　　　break;
　　　　　　　default:

　　　　　　　} printf("%d
　　　　　　",
　　　　　} printf("\nx =
　　　　%d",

iii)　　　#include<stdio.h>
　　　　 main () { int i —
　　　　 1, *pi; pi = & i;
　　　　　printf ("i = %d &i = %d px+2 = %d", i, pi, pi + 2); } /*
　　　　 Assume the address for i = 1170*/