

B.E. 2nd Semester MID Term Examination, 2007
Introduction to Computing (CST 1201)

F.M:50

Time: 2 hrs.

Attempt any five questions.

1. a) Compare the following:

- i) Keyword and Identifier. (5)
 - ii) For loop, while loop and do-while loop (3+2=5)
- b) What will be the output of the following programs?
- i)

```
#include <stdio.h>
int funct ( int count );
main() {
    int a , count ;
    for ( count = 1 ; count <= 4 ; count ++ ) {
        a = funct ( count );
        printf ( "%d ", a );
    }
}
```
 - ii)

```
#include <stdio.h>
main() {
    int i , j ;
    for(i = 1 ; i <= 5 ; i ++ ) {
        for(j = 1 ; j <= i ; j ++ )
            printf("%3d", i );
        printf("\n");
    }
}
```

2. a) Discuss the importance of following terms for C-programming: (4)
- i) #Symbolic constant
 - ii) Comment lines
- b) Write a short note on type conversion rule in an expression (2)
- c) Discuss the merits and demerits of Else-if and switch-case statements for multi-way decision. (4)
3. a) What is null statement?
- b) Explain, using a suitable example, the difference between the statements $i++$ and $++i$.
- c) What does **extern** mean in a function declaration?
- d) Write short note to illustrate the difference between 'x' and "x". (10)

4. a) Write a function that checks if a string is a palindrome or not. A string is a palindrome if it reads same from both the ends. For example, the strings "aba" and "abba" are palindromes, whereas, the string "abbaa" is not. (5)
- b) Write a C-program to decide if an element is present in an array or not. (5)

5. a) Write a program (or algorithm) to generate the following fibonacci series: (5)
- 1, 1, 2, 3, 5, 8, 13, 21,upto n terms. (n is the user choice).
- b) Write a function to compute $n!$ (factorial of n). Refer this function to determine the value of ${}^n P_r$, where, ${}^n P_r = n! / (n-r)!$. Both n and r are taken from the user. (5)

6. a) Write a user-friendly program in C that reads a string from the user and print the same string in upper case. For example, if the user gives "Ram is a good boy." as the input, then the program will print "RAM IS A GOOD BOY". (5)
- b) Write a user-friendly program in C that reads an integer from the user and prints its odd factors. (5)

7. a) Write the function "int place(char c)" that returns the position of the character 'c' in english alphabet. For example, place('z') should return 26, whereas, place('A') should return 1. (5)
- b) Write a C program that reads n integers from the user, stores them in an array and then reverse the contents of the array in the sense that the 0th element of the array should be interchanged with the (n-1)th element, 1st element with (n-2)th one, and so on. The program finally prints the contents of the resulting array. (5)

8. Write a complete user friendly C program that goes on reading characters from the user till it gets a '\$' character as input; when it prints how many times the characters of English alphabet have so far occurred in the input. Treat uppercase and lowercase letters equivalently. (10)

