C.U.SHAH UNIVERSITY

WADHWAN CITY
University (Winter) Examination -2013

Course Name :B.Tech Sem-I   Subject Name: -Fundamentals in Computer Programming   **Marks :70**
Duration :- 2:30 Hours   **Date : 26/12/2013**

Instructions:-
(1) Attempt all Questions of both sections in same answer book / Supplementary.
(2) Use of Programmable calculator & any other electronic instrument is prohibited.
(3) Instructions written on main answer Book are strictly to be obeyed.
(4) Draw neat diagrams & figures (If necessary) at right places.
(5) Assume suitable & Perfect data if needed.

SECTION-I

Q-1 **(a)** Differentiate compiler and interpreter.   **02**
       (b) Define: Software, Hardware, Token and Identifier.   **02**
       (c) What is the different between array and structure?   **01**
       (d) How can you define infinite loop using while loop?   **01**
       (e) Find out the output of following C code. Assume all the libraries have been **01**
            included and code is syntactically corrected.

```
main()
{
  int n=6, t=1;
  for(;n<10;n=n+2)
  printf("%d %d\n",n ,++ t);
}
```

Q-2 **(a)** Explain following string manipulation functions.   **04**
            (1) strcpy( ) (2) strcat( ) (3) strlen( ) (4) strcmp( )
       (b) Draw block diagram of computer system. Explain each part of it.   **05**
       (c) What is type conversion? Explain the type conversions supported by C   **05**
            language.

OR

Q-2 **(a)** Explain Switch-case statement with syntax and appropriate example.   **04**
       (b) Explain different types of operators used in 'C'.   **05**
       (c) What is structure? How it is different from union? Explain nested structure **05**
            and array of   structure with example.

Q-3 **(a)** Explain various symbols used in Flowchart and draw the flowchart for   **07**
            finding Smallest number out of three given numbers.
       (b) Write a program to display following pattern using nested for loops.   **07**
            1
            1 3
            1 3 5
            1 3 5 7
            …………
            For n lines.

OR

Q-3 **(a)** Write a program in C to generate Fibonacci series like following: **07**
                 1, 1, 2, 3, 5, 8, 13 …
            Generate 20 such numbers.
       (b) Write a program to store 10 numbers in an array. Then find out Sum,   **07**
            Maximum and Average of these 10 numbers.

26

SECTION-II

Q-4 **(a)** Find out the output of following C code. Assume all the libraries have been included and code is syntactically corrected. **02**

```
i.) void main()
    {
        int iA = 6, iB = 6;
        int *P1 = &iA, *P2 = &iB;
        printf("\n %d",(*P1)++);
        printf("\n %d",--(*P2));
        printf("\n %d", ++(*P2)-*P1);
    }

ii.) void main()
    {
        int a=3,b=5,c,*p,*q;
        p=&b; q=&a;
        c=*p % *q;
        ++(*p);
        printf ("%d %d",*p,*q);
        printf ("\n %d %d",c ,b);
    }
```

(b) List out categories of functions. **02**
(c) What do you mean by pointer to pointer? **01**
(d) Difference between fputc() and fgetc() file handling functions. **01**
(e) What is Dynamic Memory Allocation? **01**

Q-5 **(a)** Explain Dynamic Memory Allocation functions with syntax. **04**
(b) What is recursive function? Explain with suitable example. **05**
(c) What is Command Line Arguments? Explain it with proper example. **05**

OR

Q-5 **(a)** What is pointer? Explain how pointers are declared and initialized. **04**
(b) Write short notes on File Operations in C. **05**
(c) Explain the difference between "call by value" and "call by reference" with suitable examples. **05**

Q-6 **(a)** Write a function (using a pointer parameter) that calculate maximum element from given array of integer numbers. **07**
(b) Write a sample program to demonstrate the usage of "Function with arguments and return values." **07**

OR

Q-6 **(a)** Write a program using pointer to read an array of integers and print its elements in reverse order. **07**
(b) Write a program to copy the contents of one file "a.txt" to other file "b.txt". **07**

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26