CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

First Semester of B. Tech (CE/IT/EC/CSE) Examination
April - May 2019
CE141 / CE103 Computer Concepts & Programming

Date: 14.05.2019, Tuesday	Time: 01.30 p.m. To 04.30 p.m.	Maximum Marks: 70

Instructions:
1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I

Q-1 (A)   State whether the following statements are TRUE or FALSE.   [05]

1. Conditional control statements in Compiler are executed faster than an interpreter.
2. #define is a preprocessor directive.
3. The modulus operator % cannot be used with float values.
4. Variables can be used as a value in a case label of a switch statement.
5. In C, double quotes are used for character constant and single quotes are used for string constant.

Q-1 (B)   Match the following.   [04]

1.	pow(x,y)	a.	Checks whether an character c is alphabet or not.
2.	isalpha(c)	b.	It is an compile time operator which, when used with an operand, returns the number of bytes the operand occupies.
3.	getchar()	c.	x to the power y (x^y)
4.	sizeof()	d.	Reads a character from the standard input unit.

Q-1 (C)   What is the output of the following code?   [02]

1.
```c
#include <stdio.h>
int main()
{    int x = 1;
     int y = 0;
     x = x + y;
     while (x-- >= 0)
     {
         printf("%d ", x);
     }
}
```

2.
```c
#include <stdio.h>
int main()
{    int movie = 2;
     switch (movie+4)
     {
       case 1: printf("Bahubali");
       case 2: printf("Dangal");
       case 3: printf("Sultan");
       default: printf("Neerja");
     }
}
```

Q-2   **Answer the following questions. (ANY TWO)**   **[12]**

1. Explain the basic structure of a C Program with diagram.

2. Discuss any six operators in C with example.

3. Write a C Program to draw the following pattern using nesting of loops.

   1
   1   2
   1   2   3
   1   2   3   4
   1   2   3   4   5

Q-3   **Answer the following questions. (ANY TWO)**   **[12]**

1. If the ages of Megha, Rucha and Parita are input through the keyboard, write a C program to determine the youngest of the three. Use Nested if…else Statement.

2. Write a C program to find out factorial of a given number using loop. The factorial of a positive integer n, denoted by n!, is the product of all positive integers less than or equal to n.

3. Draw the flowchart to calculate percentage of students for 6 different subjects out of 100.

SECTION – II

Q-4 (A)   **State whether the following statements are TRUE or FALSE.**   **[05]**

1. When we declare an array, the size of the array should be either a numeric constant or a symbolic constant.

2. The gets() function automatically appends the null character at the end of the string read from the keyboard.

3. The variables declared inside a function are known as local variables and therefore their values are local to the function and cannot be accessed by any other function.

4. A struct type in C is a primary data type.

5. In C, a pointer variable can be multiplied by a constant.

Q-4 (B)   **Match the following.**   **[04]**

1.	fclose()	a.	Finds length of a string.
2.	malloc()	b.	Used to test end of file condition.
3.	strlen()	c.	It is a dynamic memory allocation function which allocates the requested size of bytes and returns a pointer to the first byte of the allocated space.
4.	feof()	d.	Closes a file which has been opened for use.

Q-4 (C) **What is the output of the following code?** [02]

1.
```
#include<stdio.h>
int main()
{
    int i;
    int arr[5] = {8};
    for (i = 0; i < 2; i++)
        printf("%d ", arr[i] );
}
```

2.
```
#include<stdio.h>
int main()
{
    int a[] = { 1, 2, 3, 4, 5} ;
    int *ptr;
    ptr = a;
    printf("%d ", *(ptr + 3) );
}
```

Q-5 **Answer the following questions. (ANY TWO)** [12]

1. Mention any six difference between Structure and Union.

2. Write down the usage of following string handling functions with example.
   (i) strcat()
   (ii) strcmp()
   (iii) strcpy()

3. Create a Structure called library to hold accession number, title of the book, author name, price of the book and flag indicating whether the book is issued or not. (flag = 1 if the book is issued, flag = 0 otherwise). Write a program to enter data of one book and display the data.

Q-6 **Answer the following questions. (ANY TWO)** [12]

1. Write a C program to declare four arrays of same size, input values inside three arrays, do addition of three arrays and save it in fourth array and print the addition of arrays.

2. Define two user defined functions add() and mul() in a C Program which performs addition and multiplication of two numbers respectively. Write main() to call both the functions.

3. What is pointer? How is it declared? How is it initialized? What is indirection operator? What is the scale factor of a pointer? What is the size of a pointer variable?

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