Candidate Seat no.....15CE026

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

First Semester of B. Tech (CE/IT/EC) Examination

Dec - Jan 2015 - 16

CE103 Computer Concepts & Programming

Date: 01.01.2016, Friday | Time: 01:30 p.m. To 04:30 p.m. | Maximum Marks: 70

Instructions:

1. The question paper comprises 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 Do as directed. [07]

a. Differentiate: Compiler and Interpreter.

b. What is the significance of main() function in 'C' program?

c. State True or False.
sizeof() is an example of an operator and keyword in 'C' language.

d. Which is not the keyword of 'C' language?
(a) goto (b) int (c) static (d) dynamic

e. Differentiate: Entry Controlled loop and Exit Controlled loop.

f. The number used to refer to a particular element of an array is called it's .....

g. What is the correct output of the following code?

```
#include<stdio.h>
void main(){
int ch = 'a';
switch(ch)
{
 case 'a':
 case 'b':
   printf("You entered b\n");
 case 'A':
   printf("You entered A\n");
}
}
```

Q – 2.a Draw a flow chart to find maximum number from three different numbers. **[04]**

Q – 2.b Answer any two questions. **[10]**

(i) Draw and explain the basic structure of 'C' program in detail.

(ii) What is type conversion? Explain implicit type conversion and explicit type conversion with example.

(iii) The given array is float b[3][3]. Element b[0][0] is stored at address 2450. Draw the memory diagram for all the elements of given array and find out the address of element b[1][2].

Q - 3 Answer the following.

a. List out the operators used in 'C' language. **[4]**

b. Write a program to sum all the odd numbers between 1…N using if and goto statement. **[5]**

c. Write a program to read a character until * is encountered. Also count the number of upper case, lower case and numbers entered by the users. **[5]**

OR

Q - 3 Answer the following.

a. Explain else if ladder with example and compare it with nesting of if…..else statements. **[4]**

b. Write a program to enter the marks of 5 students for 6 subjects using 2-dimensional array. Calculate the result of each student and display the percentage. **[5]**

c. Write a program to fetch marks from the user and display equivalent grade according to following table using switch case statement. **[5]**

Marks	Grade
100-80	Honour
79-67	Distinction
66-60	First Class
59-50	Second Class
49-40	Pass Class
39-0	Fail

SECTION – II

Q - 4 Answer the question below.

a. If array is declared as a[5], then *(a+3) refers to **[01]**
(a) a[1] (b) a[2] (c) a[3] (d) None

b. In function, …….. parameters are used in definition of function, while …….. parameters are used in function call. **[01]**
(a) formal, actual (b) local, global (c) actual, formal (d) None of above

c. What is the correct output of the following code? **[01]**

```
#include<stdio.h>
#include<string.h>
void main()
{
 char s[15];
 strcpy(s,"abcd");
 printf("%d %d", strlen(s), sizeof(s));
}
```

d. Explain free() and realloc() functions used for dynamic memory allocation. **[02]**

e. Differentiate: Structure and Union. **[02]**

Q – 5.a What is recursive function? Explain with suitable example. Also write advantages and disadvantages of recursion. **[05]**

OR

Q – 5.a Explain array of pointers with suitable example. **[05]**

Q – 5.b Explain the difference between call by value and call by address with example. **[04]**

Q – 5.c Explain following functions used for random access to files. **[05]**
a. ftell(); b. rewind(); c. fseek();

OR

Q – 5.c Write various string handling functions with sample 'C' code. **[05]**

Q – 6.a List out all categories of functions and explain any three of that with example. **[04]**

Q – 6.b Write a program to add 10 integer numbers of an array using pointer variables. Use pointer to read numbers from user. **[05]**

Q – 6.c Write a program to find the length of a given string and also copy one string into another without using string.h header file. **[05]**

OR

Q – 6.a (i) Explain fopen() function with all modes. **[04]**

(ii) Differentiate: malloc() and calloc() functions.

Q – 6.b Define a structure Time having integer data members hour, minute and second. Write a program to enter and then add two variables and store the result into third variable. Validate the seconds and minutes of the result and print it. (Ex. 3 Hours 65 minutes 70 sec. = 4 Hours 6 minutes 10 sec.) **[05]**

Q – 6.c Write a program that takes contents of a file and copied them into another file and print it on the screen. **[05]**

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