Candidate Seat no.....

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

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

Nov 2018

CE141 / CE103 Computer Concepts & Programming

Date: 24.11.2018, Saturday **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 Answer the following short questions. **[08]**

1. Define program and programming.
2. List and define two types of software.
3. Identify the token type for the following.
   (a) CHAR (b) typedef (c) 3.5e-5 (d) "main"
4. List different storage classes supported in C language.

Q – 2 (A) Match the following. **[02]**

1.	fseek()	a.	Reset file pointer to starting of the file
2.	ftell()	b.	Move file pointer to desired location
3.	rewind()	c.	Return zero if entire data of file is read
4.	feof()	d.	Return non zero value if error is detected
		e.	Used to know current position of file pointer

(B) Answer the following questions. (ANY ONE) **[05]**

1. Draw a flow chart to print maximum of three numbers.
2. Differentiate compiler and interpreter.

(C) What is the output of following code in Turbo C? (ANY FIVE) **[05]**

1.
```
#include<stdio.h>
void main()
{
int a=8;
a=a>>4;
if(a)
{printf("HI");}
else
{printf("BYE");}
getch();
}
```

2.
```
#include<stdio.h>
void main()
{
int a,b;
scanf("%2d%5d",&a,&b);
printf("%d\n%d",a,b);
getch();
}
```

NOTE: user give input as below

31426 50

3.
```
#include<stdio.h>
void main()
{
int a=10,b;
b=a++ + a++ - ++a - a--;
printf("%d\n%d",a,b);
getch();
}
```

4.
```
#include<stdio.h>
void main()
{
int a=32767;
a++;
printf("%d",a);
getch();
}
```

5.
```
#include<stdio.h>
void main()
{
int a=10;
switch(a)
{
case 0:
printf("HI");
case 10:
printf("20");
case 20:
printf("10"); break;
default:
printf("BYE");
}
getch();
}
```

6.
```
#include<stdio.h>
void main()
{
enum day {mon,tue,wed=6,thu,fri=1,sat};
enum day d;
d=1;
if(d==tue)
{printf("%d",d);}
if(d==fri)
{printf("%d",d);}
getch();
}
```

Q – 3 Answer the following questions. (ANY THREE) **[15]**

1. Write a program to create structure named SALARY having data members employee name, basic salary, gross salary and one inner structure of ALLOWANCE having data members DA and HRA. Take name and basic salary as input from user for one employee and calculate DA, HRA and gross salary. Display employee name and gross salary on screen.

   NOTE: DA = 136% of basic salary
   HRA = 10% of basic salary
   Gross salary = basic salary + DA + HRA

2. Write a program to read marks (out of 100) of 10 students in array using pointer to array. Compute and display the number of students in categories FAIL, PASS, FIRST CLASS and DISTINCTION.

   NOTE:

Marks	>=70	60 to 69	45 to 59	< 45
Class	DISTINCTION	FIRST CLASS	PASS	FAIL

3. Write a program to take integer number from user. Calculate and display factorial of it using recursive function.

4. Write a menu driven C program using switch case which has following options:
   A. Addition
   S. Subtraction
   Create two user defined function, as mentioned below, to perform respective operations and call them from the menu option.
   ADD() – with argument (call by address) , without return
   SUB() – without argument , with return
5. Draw block diagram of basic structure of C program.

SECTION – II

Q - 4 Answer the following short questions. **[08]**

1. char c[15]={"INDIA"};
   What will be the value of c[9]?
2. Explain strstr() and strcat() functions of <string.h>.
3. Explain malloc() and calloc() function of dynamic memory allocation.
4. Explain ternary operator with example.

Q – 5 (A) Answer following multiple choice questions. **[02]**

1. How many number of times following for loop will be executed?
   for(i = m ; i < n ; i + = x)

(a) n - m (b) n - m - x (c) (n - m) / x (d) m – n + x

2. What is the output of following program?
   #include<stdio.h>
   void main()
   {printf("Charusat\0University");getch();}

(a) Charusat\0University (c) Charusat0University
(b) CharusatUniversity (d) Charusat

(B) Answer the following questions. (ANY ONE) **[05]**

1. Explain array of pointer and pointer to pointer with example.
2. Explain two types of initialization for one dimension array. Draw the memory layout for following two dimensional array.
   float a[3][4];

(C) Answer the following questions. (ANY FIVE) **[05]**

1. Pointer occupies _____ bytes in Turbo C.
2. Union XYZ{int a[10]; float b; double c;};What is the size of XYZ in Turbo C?
3. Memory block can be released using _____ function.
4. _____ function is used to check entered character if upper case letter or not.
5. Arrange following operators in ascending order of their precedence.
   (a) && (b) = (c) < = (d) <<
6. Consider the following code. How to print the value of 'A' using 'Q'?
   int A=10,*P,**Q; P=&A;

[15]

Q - 6 Answer the following questions. (ANY THREE)

1. Write a C program to take two matrices (size 3×3) as input from user, perform addition of them and display answer matrix on the output screen.
2. Consider to files DATA.txt and COPY.txt. Write a C program to copy content of DATA.txt file in reverse order in COPY.txt file.
3. Write a C program to print the following pattern. Take number of rows from the user.

```
A  A  A  A
1  1  1
B  B
2
```

4. Write a C program to take two strings from the user and compare them without using library functions of <string.h>. If both are same the display "SAME" otherwise display "DIFFERENT".
5. Explain implicit and explicit type conversion with example.

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