Q.P. Code :03594

[Time: $2\frac{1}{2}$ Hours] **[Marks:75]**

Please check whether you have got the right question paper.

N.B:
1. All questions are is compulsory.
2. Figure to the right indicate full marks.
3. Illustration, in-depth answers and will be appreciated.
4. Mixing of sub-question is not allowed.

Q1 Attempt All (Each of 5 marks)

A i. Which is the only function all C program must contain? 15
   a. start()
   b. system()
   c. main()
   d. printf()

ii. We can insert pre written code in a C program by using
   a. #read
   b. #get
   c. #include
   d. #put

iii. A pointer is
   a. A keyword used to create variable
   b. A variable that stores address of an instruction.
   c. A variable that stores address of other variable.
   d. All of the above.

iv. The keyword used to transfer control from a function back to the calling function is
   a. switch
   b. goto
   c. go back
   d. return

v. Difference between structure and union is
   a. We can define function within structure but nit within a union
   b. We can define function within union but nit within a structure.
   c. The way memory is allocated
   d. There is no difference.

B Fill in the blanks
   a. An--------constant refers to a sequence of digits
   b. A program consist of a for statement within another for statement, is called as ---------
   c. A function that calls itself is known as a ----------function
   d. The variable declared in a structure definition are called its -------.
   e. Function is used to close a file.

C Short Answers.
   a. List arithmetic operators.
   b. What does “&” do in scanf()?
   c. What are arrays?
   d. What is functions prototype?
   e. List any two functions, which are used to manipulate string?

Q2 Attempt the following (Any three) (each of five marks) 15
   a. Write a short note on basis structure of C program.
   b. What is meant by formatted input and output?

c. What are relational operators? Write a C program to show implementation of relational operators in c program?
d. Discuss the concept of nesting of loop with an example.
e. Write programs to print numbers from 1 to 20 in ascending order using do-while loop.
f. What is null statement? Explain a typical use of it.

Q3 Attempt the following (Any three) (each of five marks) 15

a. What are multi-dimensional arrays? How one can assess an array element? Explain with the help of an example.
b. Briefly explain the working of following function.
   - getchar()
   - puts()
c. What are strings? Write a c program to declare two string "computer" and "science", use an appropriate string manipulation function to display output as one string "computer science".
d. How function declaration differs from function definition? Write a C program to show function calling by passing a value.
e. Define recursion. Write a program to calculate factorial of a number entered by user, using recursion.
f. Write a short note on global and local variable

Q4 Attempt the following (Any three) (each of five marks) 15

a. What is pointer? How is pointer initialized?
b. List different benefits of pointers
c. How structures are initialized? How does structure differs from array?
d. What is the use of dynamic memory allocation?
e. Discuss the working of following functions
   - fopen()
   - fclose()
   - fprintf()
   - getw()
   - putw()
f. Compare and contrast between c structures and python tuples.

Q5 Attempt the following (Any three) (each of five marks) 15

a. Write a sort note on automatic and explicit type conversation
b. Write a program which consist of a function and show the use of return statement.
c. Write a program which uses nested structure.
d. Compare static typing in c vs dynamic typing in python.
e. Explain the following
   - malloc()
   - calloc()