

Q.P. Code :00895

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

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. **All** questions are **compulsory**.
 2. Make **suitable assumptions** wherever necessary and **state the assumptions** made
 3. Answers to the **same question** must be **written together**.
 4. Numbers to the **right** indicate **marks**.
 5. Draw **neat labeled diagrams** wherever **necessary**.
 6. Use of **Non-programmable** calculators is **allowed**.

1. **Attempt any three of the following:**

15

- a. What is the role of a compiler and interpreter in programming?
- b. Draw a flowchart to generate numbers from 1 to 10.
- c. What are the various data types in C? Explain them. Write
- d. the rule for all numeric constants in C.
- e. What is a variable? How are they declared and used in expressions in C?
- f. Determine if the following identifiers are valid in C
 - i.) record I
 - ii.) \$tax
 - iii.) 123-45-6789
 - iv.) address and name
 - v.) file_3

2. **Attempt any three of the following:**

15

- a. Write a program in C to find the area and circumference of a circle.
- b. Explain the increment and decrement operator in C with example.
- c. Explain the following functions in C
 - i.) sin()
 - ii.) exp ()
 - iii.) pow ()
 - iv.) tolower (c)
 - v.) putchar (c)
- d. Write a program in C to find fourth roots of a number entered by the user.
- e. Describe the syntax of the scanf () statement in C.
- f. Explain following with suitable example
: ? , + = and % =

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3. **Attempt any three of the following:** 15
- Describe the syntax of for statement in C. Explain with suitable example.
 - Write a program in C to generate the Fibonacci series (0, 1, 1, 2, 3, 5, 8.....) n terms using a while loop.
 - What is the conditional statement in C? Describe its various syntax.
 - Write the general syntax for function declaration and definition. Explain with example.
 - Write a function fact() in C to find the factorial of a number and use it to generate factorial of numbers from 1 to 10.
 - Explain with example various ways of calling a function in C.
4. **Attempt any three of the following:** 15
- What are storage classes in C? What is their scope in C?
 - What are preprocessor directives in C? Explain #include and #define in C.
 - What are two dimensional arrays in C? How can they be declared and initialized in C? Write a program in C to find the sum of 20 double values entered by the user.
 - Write a short note on strings in C.
 - Explain the following functions in C:-
 - strcat()
 - strlen()
 - strcmp()
5. **Attempt any three of the following:** 15
- What are pointers in C? Write a program in C to add 2 float numbers using pointers.
 - Write a short note on pointer arithmetic in C.
 - Explain the terms "array of pointers" and "pointer to an array" in C.
 - Explain following declarations in C


```
struct
{
int acct no;
char acct_type;
char name[80];
float balance;
} account;
account cust, customer l [10], *pc;
```
 - Explain the difference between structure and union in C.
 - Explain how members of a structure are accessed by a variable and a pointer in C.