

2024

COMPUTER SCIENCE

Paper : COMM010104 / COMP010104

(COMPUTER FUNDAMENTALS AND PROGRAMMING)

Full Marks : 45

Time : 2 Hours

The figures in the margin indicate full marks for the questions

1. Answer the following question in very short : 1x5=5
 - a) ASCII value of the character 'A' is _____.
(i) 64, (ii) 65, (iii) 100, (iv) 26
 - b) C is a Medium-Level programming language.
('TRUE' or 'FALSE')
 - c) The assignment operator '=' has the right to left associativity. ('TRUE' or 'FALSE')
 - d) Which string manipulation function is used join two strings?
(i) strlen(), (ii) strcmp(), (iii) strjoin(), (iv) strcat()
 - e) Which preprocessor directive in C is used for macro definition?
(i) #include, (ii) #typedef, (iii) #define, (iv) #ifdef
2. Answer the following questions (*any five*) : 2x5=10
 - a) What do you mean by formal parameter and actual parameter?

b) What is the output of the function block?

```
void facts()
{
    int i=10, j, k;
    j=++i;
    k=j++;
    printf("%d %d", i, k);
}
```

c) Convert the decimal number $(-27)_{10}$ into its binary equivalent number.

d) Find out the sum of the two octal numbers $(125)_8$ and $(43)_8$.

e) What is L-value and R-value in C?

f) Mention two differences of Compiler and Interpreter

g) What is file pointer? Give example.

h) Write the uses of `malloc()` and `free()` functions.

3. Write briefly on the following (*any four*): $4 \times 5 = 20$

a) Briefly explain the different types of operators used in C

b) What is pointer and pointer arithmetic? Give example. Define call by value and reference?

c) What is array? Explain how we initialize arrays using a suitable example.

d) What is structure in C? Define a structure for the following data :

Employee No, Name, Designation, Salary

e) Write a program to read a text file in C

f) Draw a flowchart to find the smallest of three numbers.

g) What do you mean by overflow and underflow in binary arithmetic? Perform the arithmetic operation in binary number system : $25 - 30$

4. Answer *any one* from the following questions: $1 \times 10 = 10$

a) What is recursion? Write a program in C to find out factorial of an integer by using a recursive function.

b) Draw a block diagram of a digital computer and explain its major components.

c) Write a program in C to check whether a string is palindrome or not.