2025

(NEP—2020)

(5th Semester)

MATHEMATICS (MAJOR3/MINOR)

(Computer Programming in C)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(SECTION : A—OBJECTIVE)

(*Marks* : 10)

Put a Tick (✓) mark against the correct answer in the brackets provided : 1×10=10

1. The number of keywords available in C is

(a) 30 ( ) *(b)* 31 ( )

(c) 32 ( ) *(d)* 33 ( )

2. The value of 9 ((8 % 2) 4 2) 1 is

(a) –1 ( ) *(b)* 2 ( )

(c) 1 ( ) *(d)* 2 ( )

3. What is the only function that must contain in all C programs?

(a) start( ) ( )

(b) system( ) ( )

(c) main( ) ( )

(d) include( ) ( )

4. A switch statement is used to

(a) switch between functions in a program ( )

(b) switch from one variable to another variable ( )

(c) choose from multiple possibilities which may arise due to different values ( )

(d) None of the above ( )

5. In an exit-controlled loop, if body is executed n times, then the test condition is evaluated _____ times.

(a) n ( ) *(b)* n 1 ( )

(c) n 1 ( ) *(d)* n^2 ( )

6. The function pow( ) is working under the library function

(a) stdio.h ( ) *(b)* conio.h ( )

(c) math.h ( ) *(d)* None of the above ( )

7. When do we mention the prototype of a function?

(a) Defining ( ) *(b)* Declaring ( )

(c) Prototyping ( ) *(d)* Calling ( )

8. Which of the following adds one string to the end of another?

(a) append( ); ( )

(b) stringadd( ); ( )

(c) strcat( ); ( )

(d) stradd( ); ( )

9. Which one of the following gives the memory address of an integer variable x?

(a) x; ( )

(b) x; ( )

(c) &x; ( )

(d) address(x); ( )

10. The unoccupied space between the members of a structure is known as

(a) slack byte ( )

(b) word boundary ( )

(c) structure space ( )

(d) bit fields ( )

(SECTION : B—SHORT ANSWERS)

(*Marks* : 15)

Answer *five* questions, taking at least *one* from each Unit : 3×5=15

UNIT—I

1. What are constants? Explain different types of constant.

2. Write a brief note on logical operators.

UNIT—II

3. Explain 'switch' with a program.

4. What is meant by 'goto' statement? Write a program using 'goto' statement.

UNIT—III

5. Define a function. Write a program showing declaration of function.

6. Write the advantages of recursion over iteration.

UNIT—IV

7. How does structure differ from union?

8. What is array? Write a note on different types of array.

(SECTION : C—DESCRIPTIVE)

(*Marks* : 50)

Answer *five* questions, selecting at least *one* from each Unit : 10×5=50

UNIT—I

1. What do you understand by C? Explain the structure of C program with a neat diagram.

2. Write brief notes on *(a)* arithmetic operators, *(b)* assignment operators and *(c)* conditional operators with a program of each.

UNIT—II

3. Explain while and do-while loops by giving suitable program of each.

4. Explain continue and break statements by giving suitable program of each.

UNIT—III

5. What are meant by call by value and call by reference? Explain them by giving suitable example of each.

6. Explain any three string handling functions in C with suitable programs.

UNIT—IV

7. What is an array of pointer? Write a program to illustrate array of pointer and explain.

8. What is structure within structure? Write a C program to demonstrate structure within structure and explain in brief.

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