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63 (FY)SEM-2/SEC2/MATSEC1023

2025

MATHEMATICS

(SEC)

Paper : MATSEC1023

(Programming in C)

Full Marks : 40

Pass Marks : 16

Time : Two hours

The figures in the margin indicate full marks for the questions.

1. Choose the correct answer : $1 \times 5 = 5$

(i) Which of the following is a valid variable name in C ?

(a) 2number

(b) num_ber

(c) #count

(d) int

(ii) Which operator has the highest precedence in C ?

- (a) + (addition)
- (b) == (equality)
- (c) * (multiplication)
- (d) && (logic AND)

(iii) What is the purpose of the scanf() function in C ?

- (a) To print output
- (b) To read input
- (c) To declare variables
- (d) To perform arithmetic

(iv) Which keyword is used to exit a loop prematurely in C ?

- (a) break
- (b) return
- (c) continue
- (d) exit

(v) In a C program, where is the main() function located ?

- (a) Inside a library

(b) At the end of the program

(c) At the entry point

(d) In a separate file

2. Answer the following questions : **(any five)**

2×5=10

(i) Define a constant in C with an example.

(ii) Write the syntax for declaring a one-dimensional array in C.

(iii) What is the difference between ++x and x++ ?

(iv) Write a single-line if statement to check if a number is positive.

(v) What does the continue statement do in a loop ?

(vi) Explain the role of formal arguments in a function.

(vii) Name two library functions used for input/output in C.

3. Answer the following questions : **(any three)**

5×3=15

(i) Explain the hierarchy of operations in C with an example expression.

- (ii) Write a C program fragment using a for loop to print numbers from 1 to 10.
- (iii) Describe the difference between if-else and switch statements with examples.
- (iv) How are values initialized in a two-dimensional array? Provide an example.
- (v) What is a function prototype? Write an example for a function that adds two integers.

4. Answer the following question : **(any one)**
10

- (i) Write a C program to sort an array of 5 integers in ascending order using the bubble sort algorithm. Explain each step.
 - (ii) Explain the structure of a C program in detail, including the role of input/output functions, and provide an example program to find the sum of two numbers.
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