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63 (FY)SEM-1/MAJ1/BCAMAJ1014

2024

COMPUTER APPLICATION

Paper : BCAMAJ1014

(Programming Fundamentals using C/C++)

Full Marks : 50

Pass Marks : 20

Time : Two hours

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

- (f) What are call by value and call by reference. Define with example.
- (g) Write a C/C++ program to sort n number using bubble sort (using function).
- (h) Write a C/C++ program to search a number using linear search technique.
4. Answer the following : **(any one)** $10 \times 1 = 10$
- (a) Give a detailed explanation of the classification of operators in C/C++, including examples for each category.
- (b) Describe the memory allocation functions (malloc, calloc, realloc, and free), including how dynamic memory allocation works in C and the importance of free.

1. Choose an answer from each question : $1 \times 5 = 5$
- (a) What is the correct definition of a null pointer in C ?
- (i) A pointer that points to memory address 0
- (ii) A pointer that points to uninitialized memory
- (iii) A pointer that points to the last element of an array
- (iv) A pointer that points to garbage value

Contd.

(b) Which function is used to read a string in C?

- (i) gets()
- (ii) printf()
- (iii) scanf()
- (iv) puts()

(c) What is the difference between struct and union in C?

- (i) Struct uses less memory than union
 - (ii) Union allows multiple members to share the same memory location
 - (iii) Struct can hold only one data type
 - (iv) Union doesn't allocate any memory
- (d) What is the default return type of main() in C?

- (i) void
- (ii) int
- (iii) float
- (iv) char

(e) Which loop is guaranteed to execute at least once?

- (i) for loop
- (ii) while loop
- (iii) do-while loop
- (iv) None of the above

2. Answer the following : **(any five)** $2 \times 5 = 10$

- (a) What is keyword?
- (b) What is recursion in C?
- (c) What is actual and formal parameters?
- (d) How arrays are initialized?
- (e) What is the base address of an array.
- (f) Define the purpose of goto function.
- (g) How do you declare a pointer in C?

3. Answer the following : **(any five)** $5 \times 5 = 25$

- (a) Define anatomy of a function.
- (b) Write a C/C++ program to check an integer number is palindrome or not using function.
- (c) Write a C/C++ program to find the sum of diagonal and off diagonal elements separately.
- (d) Write a C/C++ program to add two integer matrices using function.
- (e) What is storage class of a variable? Define all the categories of storage class.