Exam Roll No. ....

END TERM EXAMINATION

FIRST SEMESTER (BCA) JANUARY-2024

Paper Code: BCA-103   **Subject: Programming Using 'C' Language**

Time: 3 Hours   **Maximum Marks: 60**

Note: Attempt five questions in all including Q. no.1 which is compulsory. Select one question from each unit.

Q1 Write short notes of the following: **(2x10=20)**

(a) What are shorthand assignment operators?

(b) What is #define and write its syntax?

(c) Differentiate between call by value and call by reference.

(d) Name the language necessarily need heap allocation in the run time environment and why?

(e) Define static storage class.

(f) What is typecasting?

(g) Define self-referential structure.

(h) Name functions of standard library process.h.

(i) Write usage of command line arguments.

(j) Define memory allocation for structure and array.

UNIT-I

Q2 (a) Write a C program to check Least Significant Bit (LSB) of a number is set or not.   **(5)**

(b) Explain nested control structure with an example.   **(5)**

Q3 (a) Explain labelled continue statement with flow diagram.   **(5)**

(b) Write a program to check whether the number is even or not and print using the goto statement.   **(5)**

UNIT-II

Q4 (a) Write a C program to calculate sum of array elements using pointers.   **(5)**

(b) Explain the pointers for inter-function communication.   **(5)**

Q5 (a) Write a program to find out maximum number in array using pointer. **(5)**

(b) What are callback functions and how functions can be passed to other functions as an argument.   **(5)**

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UNIT-III

Q6 (a) Write a C program to access members of a structure using pointers.   **(5)**

(b) Why do we need File Handling? Write types of files and functions in file operations.   **(5)**

Q7 (a) Write a C program using passing structure by reference.   **(5)**

(b) Explain file positioning functions.   **(5)**

UNIT-IV

Q8 (a) Write a C program to calculate the sine of an argument.   **(5)**

(b) Explain string library functions with suitable example.   **(5)**

Q9 (a) Write a program in C that write 10 integers in data.txt file and copy into the duplicate.txt file.   **(5)**

(b) Define virtual functions. Explain wide char and library functions.   **(5)**

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END TERM EXAMINATION

FIRST SEMESTER [BCA] JANUARY 2024

Paper Code: BCA-105	**Subject: Introduction to programming in C Language**
Time: 3 Hours	**Maximum Marks: 60**

Note: Question 1 is compulsory. Attempt one question from each unit.

Q1 Answer the following: **(4x5=20)**

    (a) What are data types? Explain basic data types with their associated range.
    (b) Explain switch, break and continue statement in C?
    (c) Differentiate between call by value & call by reference.
    (d) Differentiate between static & register storage class in C language with example.
    (e) What are usagecommand line arguments in C?

Unit-I

Q2 What are the different Loop control structures used in C language? Explain all of them with suitable example.   **(10)**

Q3 (a) What are different types of Operators in C? Briefly explain.   **(5)**
    (b) Write a program to find largest and smallest element in an integer array.
                                                              (5)

Unit-II

Q4 (a) Explain the concept of Arrays. How to declare and initialize 2-dimensional arrays? How it is stored in memory? Explain with suitable example.   **(5)**

    (b) Write a program to display first n prime numbers.   **(5)**

Q5 (a) Differentiate between array of pointers and pointer to an array with example.   **(5)**

    (b) Explain the concept of 'Preprocessor Directive'? Differentiate the simple macro, macro with argument and control directives with examples.   **(5)**

Unit-III

Q6 (a) Explain structures in C. Write a program to create employee structures with attributes of your own choice and create and object and display it using a function.   **(5)**
    (b) Differentiate Structures and Unions. Explain with code also.   **(5)**

Q7 (a) Explain bit-field with types and with examples.   **(5)**
    (b) Write a program to count the no of characters, white-spaces, words and lines in a file.   **(5)**

Unit-IV

Q8 Explain five string manipulation functions in detail. Write a program to copy one string into another string without using inbuilt function.   **(10)**

Q9 Explain following library functions with examples:
    (a) ctype.h (b) string.h (c) process.h. (d) maths.h (e) stdio.h   **(10)**

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