END TERM EXAMINATION

FIRST SEMESTER [BCA] DECEMBER-2024 JANUARY-2025

Paper Code: BCA-101T	**Subject: Programming for Problem Solving Using C**

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

Note: Attempt all questions as directed. Internal choice is indicted.

Q1　Attempt **any four** of the following questions:　　　　**(4x5=20)**
- (a)　Differentiate built-in functions and user-defined functions
- (b)　Give an alternative of multiple **if** statements in C.
- (c)　What does conversion specification **%6s** means? Explain with example
- (d)　Write a C program to find the area of a triangle using **macros**
- (e)　List any four unconditional control statements in C.
- (f)　What is a **null** character? What is its use in a string?
- (g)　Distinguish between append mode and read mode.
- (h)　What is the difference between #include<abc.c> and #include "abc.c"?

Q2　(a)　Give differences between **while** and **do-while** statement.　　**(5)**
　　(b)　Write a C program to multiply m*n matrices and store the results in a third matrix.　　**(5)**

OR

Q3　(a)　Write a C program to test whether a given string is a palindrome string. Explain the working of the program.　　**(5)**
　　(b)　Write a program in C to count the number of lines, words, characters in a given text.　　**(5)**

Q4　(a)　What is a structure? How is it different from an array? How are they defined and initialized? Explain with examples　　**(5)**
　　(b)　Write a C program by using structures to read the following information of 100 employees.　　**(5)**
　　　　Employee name, employee number, experience (in years) and salary
　　　　The program should print the number and names of all the employees who have 5 years or more experience but salary less than Rs. 10,000.

OR

Q5　(a)　Write a recursive function to display the first nth terms of the Fibonacci series.　.
　　　　0 1 1 2 3 5 8 13 . . . .
　　　　Also write the main program.　　**(5)**
　　(b)　Write a function to add two integers and another function to multiply two integers　　**(5)**

Q6　(a)　Explain with examples the various file handling functions available in C. **(5)**
　　(b)　What is a preprocessor? Explain the various preprocessor directives　　**(5)**

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OR

Q7 (a) List any ten file processing functions in C along with the examples **(5)**

(b) A student master file consists of registration number, name and marks in five subjects. Write a C program which will read the file and print a list of students who have failed in one or more subjects. Assume 40% is the pass mark. **(5)**

Q8 (a) Write a program in C to create a file named DEPARTMENT for storing information about employees. The record consists of the name of staff, designation, basic pay and earning. Calculate the earnings as basic + DA where DA is 159% of basic pay. **(5)**

(b) Declare a pointer to call these functions with two integer arguments. Using the pointer call the function to find sum and product of any two given integers **(5)**

OR

Q9 (a) What is a union? For what kind of applications are unions useful? Explain with an Example **(5)**

(b) Write a C program calls a function reverse() which accepts a string and display its reverse. **(5)**

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END TERM EXAMINATION

FIRST SEMESTER [BCA] DECEMBER-2024

Paper Code: BCA-103	Subject: Programming Using 'C' Language
Time: 3 Hours	Maximum Marks: 60

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

Q1 Answer the following **(any four)**   **(4x5=20)**
   (a) Differentiate between break and continue statement by giving example.
   (b) What are the data types available in C language? Explain the memory allocation and the range of data accepted in the data type.
   (c) Differentiate call by reference and call by value in function.
   (d) Differentiate structure and array with program code.
   (e) What are enumerations? Explain with examples.
   (f) Explain the use of file positioning function in File handling with an example.

UNIT-I

Q2 (a) Explain different types of operators with examples. Describe the precedence and associativity of different operators in C Language in a tabular format.**(5)**
   (b) Differentiate while and do-while loop using flowchart and program code. **(5)**

Q3 (a) Compare and contrast Switch Case and Else if Ladder. Give an example to justify your answer.   **(5)**
   (b) Write a program to display the first n prime numbers, where n is accepted from user.   **(5)**

UNIT-II

Q4 (a) What are the advantages of writing a function? Explain actual and formal arguments by giving example and explain the need of function prototype.**(5)**
   (b) Write a function 'Prime' that accepts two integer arguments start and finish. Function displays all prime numbers between start and finish. **(5)**

Q5 (a) What are storage classes? Explain each storage class with program code and explain the lifetime and scope of each storage class. **(5)**
   (b) Differentiate the declaration of pointer to an array and array of pointer with example. **(5)**

UNIT-III

Q6 (a) What are structures? How is it different from bitfield structure. Explain the memory allocation to structure variable and bit field variable with example. **(5)**
   (b) What is File Pointer? Explain any five File Handling functions. Write a program to copy the content of one text file to another text file. **(5)**

P.T.O.

Q7 (a) Explain how structure and union are different with the help of memory allocation and usage. **(5)**

(b) Write a program to create a structure "product" with members product name and cost. Create an array of structures to accept details of 10 products. Create a function that displays the product name and cost of product having highest cost. **(5)**

UNIT- IV

Q8 Explain two functions each of the following header files with syntax and program code. **(10)**
i) stdlib.h   ii) conio.h   iii) math.h   iv) process.h

Q9 Write you own functions to replicate following the functions of string. h header file. **(10)**
i) strlen   ii) strcat   iii) strupr   iv) strrev

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