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)

P.T.O.

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. https://www.ggsipuonline.com
(5)

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