Hi-Tech Institute of Engineering and Technology, Ghaziabad

B.Tech (I/II Semester)
Model Question Paper -2
Programming For Problem Solving (BCS 101/201)

Time: 3 HOUR   **Total Marks: 70**

CO 1.	To Develop Simple Algorithms for Arithmetic and Logical Problems
CO 2	To Translate the Algorithms to Programs & Execution (in C Language).
CO 3	To Implement Conditional Branching, Iteration and Recursion.
CO 4	To Decompose a Problem into Functions and Synthesize a Complete Program Using Divide and Conquer Approach.
CO 5	To Use Arrays, Pointers and Structures to Develop Algorithms and Programs.

SECTION-A

Q.1	Attempt all parts	(7×2=14)

a.	What is NULL character?	CO 3
b.	Draw Memory hierarchy in computer system.	CO 1
c.	Differentiate between array and structure.	CO 3
d.	In C programming what will be the output of the following code? Explain your answer. printf("%d", strcmp("Put", "PUT"));	CO 4
e.	Write the use of continue statement.	CO 3
f.	What are preprocessor directives? What is the difference between the following directives? #include<conio.h> and #include "conio.h"	CO 1
g.	What is full form and significance of eof()?	CO 5

SECTION-B

Q.2	Attempt any three parts	(3×7=21)

a.	Explain the following (i) Top Down Approach (ii) Macros	CO 5
b.	Define storage classes with its type in detail.	CO 1
c.	Take the three digit number from user then write s program to check whether entered number is palindrome or not.	CO 3
d.	i. What are the various primary data types available in C language? Also write the size and format specifier of each data type. ii. Define Recursive Function? Write a program to print Fibonacci series with recursive function.	CO 1 CO 3
e.	Write short notes on (i) Compiler (ii) Interpreter (iii) Linker (iv) Loader	CO 1

SECTION-C

Q.3	Attempt any one part	(1×7=7)

a.	What is searching? Write algorithm for Binary Search.	CO 4
b.	What are different conditional statements in C programming? Explain with proper example of each.	CO 2

Q.4	Attempt any one part	(1×7=7)

a.	What is sorting? Write a program to sort n positive integers using Bubble Sort. Also draw its flowchart.	CO 4
b.	Write a C program to find the sum of two nxm matrix.	CO 3

Q.5	Attempt any one part	(1×7=7)

a.	**i.** Write short note on time and space complexity. What is the complexity of bubble sort? **ii.** Write a C program to print the following : A A B A B C A B C D	CO 4 CO 3
b.	Write a program to find out the odd place and even place numbers from array elements and print the sum of these numbers respectively.	CO 4

Q.6	Attempt any one part	(1×7=7)

a.	Differentiate between high level and low level programming. Write a program to find out whether a given number is prime or not.	CO 3
b.	Write the importance of dynamic memory allocation with functions used in it.	CO 5

Q.7	Attempt any one part	(1×7=7)

a.	Differentiate between different read modes of a file. Write a program to copy contents of one file to another file.	CO5
b.	Differentiate between call by value and call by reference with proper example	CO5