

Total number of printed pages:

Programme(UG)/II/UCSE201

2022

PROGRAMMING FOR PROBLEM SOLVING

Full Marks : 100

Time : Three hours

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

Answer any five questions.

1.	a)	Draw the block diagram of a computer system and explain each of the units briefly.	10
	b)	Convert the following: i) $21D_{16}$ to Decimal iii) 652_{10} to Binary	2+2=4
	c)	Write the difference between the following: i) Compiler and assembler ii) while and do-while loop	3+3=6
2.	a)	What are the different types of operators in the C language? Explain all the operators with the help of suitable examples.	10
	b)	Define algorithm. Draw a flowchart to find the minimum of three integer numbers.	2+8=10
3.	a)	What is an array. What are its advantages? Write a C program to find the sum of N input numbers.	2+2+6=10
	b)	Write a C program to find the sum of two 3x3 matrices.	10
4.	a)	State the significance of break in a switch statement. Use switch statements in a C program to find if a given letter is vowel or not.	2+8=10
	b)	What is a pointer? Explain function call by reference with a suitable example.	2+8=10
5.	a)	What is the difference between user defined function and library function? Write a function to check whether a number is prime or not.	2+8=10
	b)	What is a file? How is a file opened and closed? Explain getc() and putc() functions.	2+4+4=10

6.	a)	Explain if, if-else and nested if-else with examples and syntax.	8
	b)	What is an identifier (variable)? What are the rules to construct an identifier (variable)?	2+3=5
	c)	Write a C program to find the area and perimeter of a circle. OR Write a C program which takes as input p,t,r. Compute the simple interest and display the result.	7
7.	a)	Write a C program that takes three coefficients (a,b,and c) of a quadrtatic equation: $ax^2 +bx+c=0$ as input and compute all possible roots and print them with appropriate messages.	8
	b)	Show how break and continue statements are used in a C program, with example	6
	c)	What is a string? Briefly explain any two string library functions.	6

Central Institute of Technology, Okrajhar