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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Second Semester B.Tech Degree Regular and Supplementary Examination June 2023 (2019 Scheme)

Course Code: EST 102

Course Name: PROGRAMMING IN C (Common to all programs)

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all Questions. Each question carries 3 Marks Marks

1		Differentiate among compiler, interpreter and assembler.	(3)
2		What is a flowchart? Draw the flow chart to check whether the given number is positive or negative.	(3)
3		Write the difference between 'while' and 'do -while' statements.	(3)
4		Explain various formatted I/O statements in C.	(3)
5		What are the different ways of declaring and initialising a single dimensional array?	(3)
6		Write a C program to check whether the given number is Armstrong or not. (A number is Armstrong if the sum of the cubes of the digits equals to the number)	(3)
7		Define function prototype. Why is it used? Differentiate formal and actual parameters.	(3)
8		Mention the difference between structure and union using suitable examples.	(3)
9		What is meant by the scale factor of a pointer variable? Explain using examples.	(3)
10		List out the various modes of opening a file in C language.	(3)

PART B

Answer any one Question from each module. Each question carries 14 Marks

11	a)	Write the algorithm and draw the flow chart to calculate the roots of a quadratic equation, take the coefficients as inputs.	(10)
	b)	Differentiate between system software and application software.	(4)

OR

12	a)	Explain bubble sort algorithm with an example.	(10)
	b)	Explain different types of memories used in a computer.	(4)

13	a)	Write a menu driven program to find the area of square, triangle, circle and rectangle according to the choice given.	(10)
	(b)	Differentiate between break and continue statements using an example.	(4)
		OR	
14	(a)	Explain any four types of operators used in C.	(7)
	(b)	Write a program to generate the following pattern 1 1 2 1 2 3 1 2 3 4	(7)
15	a)	Implement string concatenation without using built in functions.	(8)
	b)	Write a C program to accept a 2-D integer matrix and check whether it is symmetric or not (A matrix 'A' is symmetric if $A=A^T$).	(6)
		OR	
16	a)	Explain any four string handling functions used in C using example. Write the syntax also.	(6)
	b)	Write a program to print the product of two matrices.	(8)
17	a)	Explain different storage classes used in C by providing suitable examples.	(8)
	b)	What is meant by recursion? Write a program to find the factorial of a number using recursion.	(6)
		OR	
18	a)	Implement linear search using function. Reading the inputs and printing the result must be done in the main function.	(10)
	b)	Compare User defined functions with library functions.	(4)
19	a)	Write a program to read and store the details (the name, employee code (integer) and salary) of 'n' employees in a company into a file using structure. Print the details of the employee whose employee code is given as input.	(14)
		OR	
20	a)	What is meant by passing arguments into a function by reference? Write a program to swap two numbers using pass by reference.	(8)
	b)	Write a program to copy the content of a file to another.	(6)

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