Velagapudi Ramakrishna Siddhartha Engineering College::Vijayawada
(Autonomous)
I /IV B. Tech Degree Examinations (May 2021)
First Semester
Department of Science & Humanities
20ES1103: Programming for Problem Solving

VR20

Time: 3Hrs	MODEL QUESTION PAPER	Max Marks: 70

Part – A is Compulsory
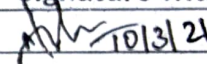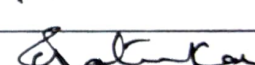Answer one (01) question from each unit of Part – B
Answers to any single question or its part shall be written at one place only

Cognitive Levels(K): K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create

Q. No		Question	Marks	Course Outcome	Cog. Level
		Part - A		**10X1=10M**	
1	a	Why step-wise refinement is required, and how it is different from the top-down design approach?	1	1	1
	b	What are the different types of language processors.	1	1	1
	c	If i = 3 and j = 9, then what is i++ * ++j ?	1	2	2
	d	Compare If statement with switch statement.	1	2	2
	e	Name different ways to access an array's element.	1	2	1
	f	Are the following two statements are identical? i. char str[6] = "VRSEC"; ii. Char *str = "VRSEC";	1	3	2
	g	How recursion is different from iteration?	1	3	1
	h	If p and q are pointer variables, then is p+q a valid statement?	1	3	2
	i	List the operators used to access members of a structure and union.	1	4	1
	j	Compare append and write modes in a file ?	1	4	2
		Part - B		**4X15 =60M**	
		UNIT - I			
2	a	Explain problem definition with a suitable example. Summarize the requirement of problem solving by computers and steps involved while solving a problem.	7	1	2
	b	Illustrate any five high-level programming languages and how these high level langages are differernt from the machine and assembly level languages?	8	1	2
		(OR)			
3	a	Develop an algorithm and draw the flowchart for swaping of two variables' values without using third variable.	7	1	3
	b	Outline the computational steps invloved to find Greatest Common Divisor (GCD) of two numbers along with flowchart.	8	1	2
		UNIT - II			
4	a	Define the syntax of 'nested if' statement, and use it to write a C program to award grade to student based on percentage of marks.	7	2	2
	b	Differentiate 'do...while' and while statements in C with syntax. Apply nested loop concept to develop a solution for finding all the prime numbers between two limits using C.	8	2	2
		(OR)			
5	a	Compare differ types of storage classes in C.	7	2	2
	b	Make use of the C derived data type to find and print the inverse of a 2D matrix.	8	2	3

UNIT - III

6	a	Implement a C program to read names into a 2D array and sort them without using string handling functions.	8	3	3
	b	Construct a C program to print the fibonacci series upto step i with and without using recursion.	7	3	3

(OR)

7	a	Define a pointer. Distinguish between different dynamic memory allocation functions in C with suitable examples.	7	3	2
	b	Build an array using C dynamic memory allocation functions and sort the elements of the array in ascending order.	8	3	3

UNIT - IV

8	a	What is an enumerated data type? Print the months of a year using the C enumerated data type.	7	4	2
	b	Select regd. no., name, branch, college name as the member variables of student (structure data type) and copy the content of variable S1 to variable S2, where S1 and S2 are of student type.	8	4	3

(OR)

9	a	Explain different types of file input and output functions in C.	7	4	2
	b	Write a C program to merge the contents of two binary files.	8	4	3

Designation	Name in Capitals	Signature with Date
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