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RV COLLEGE OF ENGINEERING®

(An Autonomous Institution affiliated to VTU)

I Semester B. E. Examinations April-2021

Common to all Branches

PROGRAMMING IN C

Time: 03 Hours *Maximum Marks: 100*

Instructions to candidates:

1. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
2. Answer FIVE full questions from Part B. In Part B question number 2, 7 and 8 are compulsory. Answer any one full question from 3 and 4 & one full question from 5 and 6.

PART-A

1	1.1	The symbol used to denote functions in flowchart is _____.	01
	1.2	Define preprocessor directive.	01

	1.3	What is the output of the following code?
		`#include < stdio.h >`
		`int main()`
		`{`
		`int x = 4; y = 14, z = 7;`
		`z = x + y;`
		`printf("%d", z);`
		`return 0;`
		`}`
			01

	1.4	What is the result of the following code?
		`#include < stdio.h >`
		`main()`
		`{`
		`int x;`
		`x = 5 * 2/(4 + 5) − (3 + 2)&&2;`
		`printf("%d", x);`
		`}`
			02

	1.5	What is the output of the following code?
		`#include < stdio.h >`
		`main()`
		`{`
		`int i;`
		`i = 2 + 3, 4 > 3, 1;`
		`printf("%d", i);`
		`return 0;`
		`}`
			01

	1.6	What will be the value of y if $x = 8$ in the expression below: `y = (x > 6? 4: 6);`	01

	1.7	What will be the output of the following code?
		`#include < stdio.h >`
		`int main()`
		`{`
		`int i = 0;`
		`switch(i)`
		`{`
		`case 0: printf("Hello\n");`
		`case 1: printf("HI\n");`
		`break;`
		`default: printf("no match\n");`
		`}`
		`return 0;`
		`}`
			02

	1.8	What will be the output of the following code?
		`#include < stdio.h >`
		`int main()`
		`{`
		`int a[3] = {5, 6, 15};`
		`a[1] = 10;`
		`int i = 0;`
		`while(i < 3)`
		`{`
		`printf("%d", a[i]);`
		`i++;`
		`}`
		`}`
			01

	1.9	What are the advantages of using functions in C?	02
	1.10	Write the declaration of structure named *Student* with following members: *Name, USN, phone number, marks in 3 subjects* Create an array of 50 structure variables for the same.	01
	1.11	List the storage classes available in C.	02
	1.12	Compare Recursion and Iteration.	02
	1.13	Members of union are accessed using _____ operator.	01
	1.14	Give the advantages of using pointers.	02

PART-B

2	a	Write a flowchart to find the largest of three numbers.	05
	b	Explain the basic structure of C program with an example code illustrating all the sections.	06
	c	Explain unformatted input and output function with examples.	05
3	a	Distinguish between the following constructs in C: i. Entry controlled and Exit controlled loops ii. *else − if* ladder and *switch*.	05
	b	Write a C program to find the second largest element in an array.	05
	c	Explain declaration and initialization of $1-D$ and $2-D$ arrays with appropriate syntax and examples.	06
		OR	

4	a	Write a C program to check whether a number is palindrome or not.	0
	b	Write a C program to read an array of 5 elements and perform the sorting using bubble sort	0
	c	Explain the following with suitable examples i. Operator precedence and associativity ii. Type conversion	0
5	a	Explain the following string handling functions with suitable examples: i. *strlen* ii. *strcpy*	0
	b	Explain the following categories of functions with examples i. Function with arguments and without return values ii. Function without arguments and with return values.	0
	c	Write a C program to concatenate two strings and display the resultant string without using string handling functions.	0
		OR	
6	a	Write a C program to convert a given string from uppercase to lowercase using character handling functions.	05
	b	Write a C program with functions to find an element using binary search.	06
	c	Write a C program to read a text and count all the occurrences of a particular letter given by the user.	05
7	a	Write a C program to find the factorial of a given number using recursion.	05
	b	Write a C program to add the elements of 1 – *D* array using pointers.	05
	c	Explain the following with examples: i. Pass by value ii. Pass by reference.	06
8	a	Write a C program to create a structure called *Complex* with real and imaginary as members and perform addition of two complex numbers.	05
	b	Explain with example, the concept of structure within a structure.	06
	c	Differentiate between structure and union with examples.	05