



**RV College of Engineering, Bengaluru-560059**  
( Autonomous Institution affiliated to VTU, Belagavi )  
**Department of Computer Science and Engineering**  
**Model Question Paper**  
**First Semester Autonomous Examinations**  
**22ES14A**

**Fundamentals of Programming using C**

**Duration: 3 Hours**

**Max marks: 100**

**Note: Answer all the questions from Part-A**

**Answer any 5 full questions from Part-B choosing one from each choice.(Question number 2 is compulsory)**

PART-A						
		Marks	CO	BTL	PO	PI CODE
1.1	Reading and printing characters symbol in flowchart is represented using _____.	1	1	1	1	1.6.1
1.2	Write an algorithm to find the area of Circle.	1	2	2	2	2.5.2
1.3	The format identifier “%d” is used for _____ data type.	1	1	2	1	1.6.1
1.4	Write the output of the following program:  #include<stdio.h>  main()  {  printf(“%d”,’a’);  }	1	2	3	2	2.5.2
1.5	_____ operator returns the number of bytes occupied by the operand	1	1	1	1	1.6.1
1.6	The _____ specification is used to read/write a hexadecimal integer	1	1	1	1	1.6.1
1.7	Write the output of the following code?  #include<stdio.h>  int main()  {  int x=3, y=5, z=7;  int a,b;	2	1	2	2	2.5.1

	<pre> a = x * 2 + y / 5 - z * y;  b = ++x * (y - 3) / 2 - z++ * y;  printf("\n a = %d", a);  printf("\n b = %d", b);  return 0;  } </pre>					
1.8	<p>Is the loop in the following program a finite or infinite loop?</p> <pre> #include &lt;stdio.h&gt; int main() {     for(;;)     {         printf("Hi! ");     };     return 0; } </pre>	1	1	2	2	2.5.1
1.9	The statement arr[3] = 10; initializes the _____ element of the array with value 10.	1	1	1	1	1.2.1
1.10	Can a two-dimensional array of specific data type have data of two different data types?	1	1	2	1	1.2.1
1.11	<p>Output of the following program is _____.</p> <pre> #include &lt;stdio.h&gt; int main() {     int a=3;     if(a-3)     {         printf("\nHello RVCE!");     }     if(1)     {         printf("\nHello RVCE, Happy to study here!");     }     return 0; } </pre>	1	2	3	2	2.5.3
1.12	What is the significance of the instruction strcpy (str1,str2)?	1	2	2	1	1.6.1
1.13	Write a snippet of code to display your name on the monitorCO2.	1	2	2,2	1	1.6.1
1.14	The number of value the function can return is _____.	1	2	2	1	1.6.1
1.15	What is a function prototype? Where can you place these prototypes in a C program?	2	2	2	1	1.6.1
1.16	Give two difference between Recursion and Iteration.	2	2	2	4	4.4.1
1.17	Define the structure named Student with the following members: Name, Age, USN, Marks of 6 subjects.	1	4	2	1	1.6.1

PART-B						
2 a.	With an example, explain the structure of C program.	8	1	1	1	2.1.2
b.	What is a computer? With a neat diagram explain the components of a computer system.	8	1	1	1	2.1.2
3a.	Write a short note on basic data types that the C language supports.	6	1	1	1	1.4.1
b.	Differentiate between typecasting and type conversion	4	1	2	1	1.4.1
c.	Write a program to count number of vowels and consonants	6	2	3	2	2.2.4
	OR					
4 a.	Explain the terms variables and constants. How many type of variables are supported by C?	4	1	1	1	1.4.1
b.	Write a program to calculate salary of an employee, given his basic pay (to be entered by the user), HRA=10% of the basic pay, TA=5% of basic pay. Define HRA and TA as constants and use them to calculate the salary of the employee.	6	2	3	2	2.2.4
c.	Write a program to prepare a grocery bill. For that enter the name of the items purchased, quantity in which it is purchased, and its price per unit. Then display the bill in the following format.	6	3	3	2	2.2.4
5 a.	Write a program to print a multiplication table of a given number, after printing the multiplication table the program should ask the user "Do you want to continue [Yes/No]? ". If a user enters "y" or "Y", then the program should print a multiplication table of the given new number and if the user enters "n" or "N", then the program should exit.	6	4	3	3	3.8.2
b.	Write a program to print a Pascal Triangle of 5	5	4	3	3	3.8.2
c.	Write a program to delete all the duplicate entries from an array of $n$ integers.	5	4	3	3	3.8.2
	OR					
6 a.	Differentiate else-if ladder from switch-case. Write a program to read the numbers $n_1$ and $n_2$ and perform arithmetic operations according to input of user choice, for example if user enters choice value 1, then program should perform addition of $n_1$ and $n_2$ and so on.	6	2	2	2	2.5.2
b.	Illustrate the concept of nested if-else with a simple example.	4	2	2	2	2.5.2
c.	Write a program that reads two matrices A and B, and compute and print the product matrix of A and B.	6	4	3	3	3.8.2
7 a.	Write a C program which uses a pointer to access the array elements without using the length of the string.	8	2	3	3	3.6.2
b.	Explain any four common operations performed on Character strings.	8	1	2	2	2.5.2
	OR					
8 a.	Define a Function and mention its uses. Write a C program to sort the numbers using the Selection sort using function.	8	2	3	3	3.6.2
b.	Write a C program to sort the elements using Bubble Sort technique using function.	8	3	3	3	3.6.2
9a.	With examples, explain different types of structure initialization.	10	2	2	2	2.5.2

b.	Define Recursion. Write a C program to find the factorial of a given number using recursion.	6	2	3	3	3.7.1
	OR					
10 a.	Write a C program to swap two numbers using functions by passing parameters by reference .	8	4	3	3	3.7.1
b.	Define pointers. Explain the use of & and * operators in pointers with suitable examples.	8	1	2	2	2.8.2