Academic year 2023-2024 (Even Sem)

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

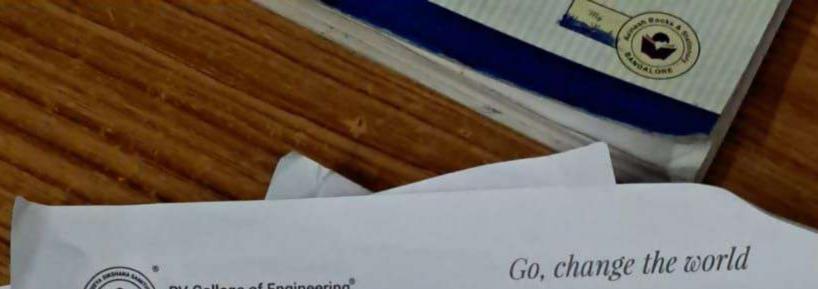|			
Date	14/05/2024	Maximum Marks	50
Course Code	CS123AT	Duration	90 min
Sem	II	Improvement CIE	
UG/PG	UG	Faculty: Prof. RBS	

Fundamentals of Programming Using C
(Common to ASE/CH/CV/EI/IEM/ET/EC)

Q. No.		Questions	M	BT	CO
1.	a	What are system softwares? Give examples.	2+2	L1	CO1
	b	What is an Operating System? Give examples.	2	L1	CO1
	c	Mention the different types of programming languages? Give examples.	2+2	L1	CO1
2.		Illustrate the structure of C program by writing a program to find whether the given year is a leap year or not.	10	L2	CO2
3.	a	Write an algorithm and flow chart to check the greater of TWO numbers.	6	L2	CO2
	b	What are identifiers in C language? List the rules to be followed while naming an identifier	4	L1	CO1
4.	a	With a neat diagram illustrate and briefly explain the typical steps for entering, compiling, and executing C programs on Linux operating system	6	L2	CO2
	b	List and explain the various categories of errors.	4	L1	CO1
5.	a	With the help of a suitable example explain implicit and explicit type conversion.	6	L2	CO2
	b	Design a C program to convert given Celsius to Fahrenheit.	4	L3	CO2

****

BT-Blooms Taxonomy, CO-Course Outcomes

	Particulars		CO1	CO2	CO3	CO4	CO5	L1	L2	L3	L4	L5	L6
Marks Distribution	Test	Max Marks	18	32	-	-	-	18	32	-	-	-	-

Course Outcomes:	
CO1:	Analyze problems and design solution using program design tools
CO2:	Evaluate the appropriate method/data structure required in C programming to develop solutions by investigating the problem.
CO3:	Design a sustainable solution using C programming with societal and environmental concern by engaging in lifelong learning for emerging technology
CO4:	Demonstrate programming skills to solve inter-disciplinary problems using modern tools effectively by exhibiting team work through oral presentation and written reports.

RV College of Engineering®
Mysore Road, RV Vidyaniketan Post,
Bengaluru - 560059, Karnataka, India

Academic year 2023-2024 (Even Sem)
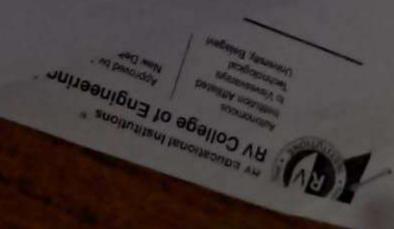
DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

Date	14/06/2024	Maximum Marks	50
Course Code	CS123AT	Duration	90 min
Sem	II	CIE -II	
UG/PG	UG	Faculty: Prof. RBS	

Fundamentals of Programming Using C
(Common to ASE/BT/CV/EI/IEM/ET/EC)

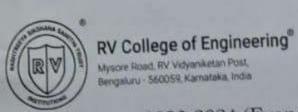| Q. No.		Questions	M	BT	CO
1.	a	Illustrate with appropriate syntax what are entry controlled loops and exit controlled loops.	6M	L2	CO1
	b	Design a C program to implement a simple calculator using Switch statement.	4M	L2	CO2
2.	a	What is an array? With correct syntax and example explain compile time initialization and run time initialization of a 1D array.	6M	L2	CO1
	b	Design a C program to find the sum and average of marks scored in a single course by a class of 40 students.	4M	L3	CO3
3.	a	Design a C Program to find the sum of all principal diagonal elements of mxn matrix.	6M	L3	CO2
	b	What is a string? With correct syntax and example explain compile time and run time initialization of a string.	4M	L2	CO1
4.	a	Design a C Program to find whether a given string is a Palindrome or not.	5M	L3	CO3
	b	List and explain with correct syntax various built in String functions.	5M	L2	CO2
5.	a	Design a C Program to find the sum of 2 Matrix.	6M	L3	CO3
	b	List and explain with correct syntax various built in Character functions.	4M	L2	CO1

BT-Blooms Taxonomy, CO-Course Outcomes

	Particulars		CO1	CO2	CO3	CO4	CO5	L1	L2	L3	L4	L5	L6
Marks Distribution	Test	Max Marks	20	15	15	-	-	-	29	21	-	-	-

Course Outcomes:	
CO1:	Analyze problems and design solution using program design tools
CO2:	Evaluate the appropriate method/data structure required in C programming to develop solutions by investigating the problem.
CO3:	Design a sustainable solution using C programming with societal and environmental concern by engaging in lifelong learning for emerging technology
CO4:	Demonstrate programming skills to solve inter-disciplinary problems using modern tools effectively by exhibiting team work through oral presentation and written reports.

RV College of Engineering®
Mysore Road, RV Vidyaniketan Post,
Bengaluru - 560059, Karnataka, India

Academic year 2023-2024 (Even Sem)

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

Date	02/07/2024	Maximum Marks	50
Course Code	CS123AT	Duration	90 min + 30 min
Sem	II	Improvement Test	
UG/PG	UG	Faculty: Prof. RBS	

Fundamentals of Programming Using C
(Common to ASE/BT/CV/EI/IEM/ET/EC)

Q. No.		Questions	M	BT	CO
1.	a	Illustrate the structure of C program by writing a program to find whether the given year is a leap year or not.	10M	L3	CO2
2.	a	What is an array? With correct syntax and example, explain compile time initialization and run time initialization of a 1D array.	6M	L2	CO1
	b	Design a C program to implement a simple calculator using Switch statement.	4M	L3	CO3
3.	a	Write an algorithm and flow chart to find the greatest of given THREE numbers.	6M	L2	CO2
	b	With correct syntax and example explain Continue statement.	4M	L2	CO1
4.	a	With the help of a suitable example explain implicit and explicit type conversion.	5M	L2	CO2
	b	Design a C program to check whether the given key element is present in an array of numbers.	5M	L3	CO2
5.	a	Design a C Program to multiply given TWO (02) matrices.	10M	L3	CO3

USN [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

RV COLLEGE OF ENGINEERING®
(An Autonomous Institution affiliated to VTU)
I / II Semester B. E. Regular / Supplementary Examinations Aug-2024
FUNDAMENTALS OF PROGRAMMING USING C (ELECTIVE)

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 is compulsory. Answer any one full question from 3 and 4, 5 and 6, 7 and 8 & 9 and 10.

PART-A

			M	BT	CO
1	1.1	Draw a flowchart to calculate the area of circle?	02	3	1
	1.2	Write an algorithm to print first 10 natural numbers?	02	3	2
	1.3	Use conditional operator to find smallest number among , b & c ?	02	2	1
	1.4	Find the output of the following program?	02	2	2

```
#include < stdio. h >
int main ()
{
    int a, b = 3;
    char c = 'A';
    a = b + c;
    printf("\n a = %d", a);
    retun 0;
}
```

			M	BT	CO
	1.5	In a do-while, if the body of the loop is executed *n* times, the test condition is evaluated _____ times.	01	2	1
	1.6	When the _check_ statement is encountered then the rest of the statements in the loop are skipped.	01	1	1
	1.7	Find the output of the following code:	02	2	2

```
include < stdio. h >
int main ()
{
    int a = 5, b = 6, c = 7;
    if (c! = 50)
        a = 10;
    else
        b = 15;
    if (a + b > 15)
        c = 12;
    a = 20;
    b = + + c;
    printf("\n a = %d \t b = %d \t c = %d", a, b, c);
    return 0;
}
```

			M	BT	CO
	1.8	Function that calls itself is known as _____ function.	01	1	1
	1.9	_____ is the default storage class for global variables.	01	1	1
	1.10	strncat is used to _____.	01	1	1
	1.11	strcmp(str1, str2) returns 1 if _____.	01	1	1

	1.12	Find the output of the following code:			
		`#include < stdio.h >`			
		`int main ()`			
		`{`			
		`int a = 3, b = 5;`			
		`int *pnum;`			
		`pnum = &a;`			
		`printf("\n a = %d", *pnum)`			
		`pnum = &b;`			
		`printf("\n b = %d", *pnum);`			
		`return 0;`			
		`}`			
	1.13	Memory for a structure is allocated at the time of _____ .	02	2	2
	1.14	By default, the return type of a function is _____ .	01	1	1
			01	1	1

PART-B

2	a	Distinguish between the following:			
		i) Hardware and software			
		ii) System software and Application software			
		Give an example for each.	06	2	1
	b	Write an algorithm and draw the flowchart to find the simple interest.	10	3	2
3	a	Discuss the process of compiling and running a C program with a neat diagram.	06	1	1
	b	Write a program to evaluate salary of an employee, given his basic pay (to be entered by the user), $HRA = 10\%$ of the basic pay, $TA = 5\%$ of the basic pay. Define HRA and TA as constants and use them to calculate the salary of the employee.	06	3	3
	c	What are C tokens? Explain the different classes.	04	1	1
		OR			
4	a	Explain the structure of a c program with an example.	06	1	1
	b	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.			
		`************* BILL *************`			
		Item Quantity Price Amount	10	3	3
5	a	Write a program using decision control and looping statement to read a 5 − digit number and then display the number in the following format. For example, the user entered 12345, then result should be:			
		12345			
		2345			
		345			
		45			
		5	08	3	3
	b	How many methods a 2 − D array can be initialized during compile time and runtime. Explain with an example for each method.	08	1	1
		OR			
6	a	Differentiate between break and continue with suitable example and flow chart.	06	4	1
	b	Write a program to multiply two matrixes $(A \times B)$ by accepting the array elements at runtime and display the result.	10	3	2

Q		Question			
7	a	Write a program to sort names of students using Array of Strings.	08	3	3
	b	Distinguish between Library functions and User defined functions in C and explain with examples.	04	2	1
	c	Differentiate actual parameters and formal parameters.	04	2	1
		OR			
8	a	Explain the various categories of user defined function in C with examples.	08	1	1
	b	Write a C program to concatenate two strings without using string function.	08	3	2
9	a	Differentiate between 'call by value' and 'call by reference' concept with an example.	08	2	1
	b	Write a program in C to reverse a string using recursion.	08	3	2
		OR			
10	a	What is a pointer C programming? Explain in detail with example, what are its benefits?	08	1	1
	b	Write a C –program to collect five employee's details (Name, DOB, total experience) and display the information using structures.	08	3	3