**CS113ATA / 22ES14A / 22ES24A**

**USN** | | | | | | | | | | |

# RV COLLEGE OF ENGINEERING®

**(An Autonomous Institution affiliated to VTU)**

**I/II Semester B. E. Regular / Supplementary Examinations Feb-2024**

**Common to AS / CH / IM / ME / EC / EE / EI / ET / CV**

## 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

| | | | |
|---|---|---|---|
| 1 | 1.1 | List the advantages of flowcharts. | 02 |
| | 1.2 | Write an algorithm to find the area of triangle. | 02 |
| | 1.3 | _____ Phase is also called construction or code generation phase. | 01 |
| | 1.4 | $C$ programs are converted into machine language with the help of _____. | 01 |
| | 1.5 | What is the output of the below snippet? and why?<br>$\#include < stdio.h >$<br>$int\ main\ ( )$<br>{<br>$if\ (0,1,-1)$<br>$printf(\text{“}programming\ in\ c\text{”});$<br>$else$<br>$printf(\text{“}nothing\text{”});$<br>$return\ 0;$<br>} | 02 |
| | 1.6 | Name the string handling function that is used to copy ‘n’ characters from one string to another and write its syntax. | 02 |
| | 1.7 | Write a program snippet for reversing the given number using for loop. | 02 |
| | 1.8 | Write the syntax for declaring a two dimensional array. Give an example. | 02 |
| | 1.9 | List the types of functions. | 02 |
| | 1.10 | Define a structure $COMPLEX$ with fields as realPart, imgPart show how do you assign values for atleast one complex number using structure. | 02 |
| | 1.11 | Write the syntax for declaring an integer pointer and make it point to an integer variable. | 02 |

### PART-B

| | | | |
|---|---|---|---|
| 2 | a | With a neat diagram explain the basic computer organization in detail. | 08 |
| | b | What is a flowchart? Write the symbols used for writing flowchart. Write flowchart to determine the largest of three numbers. | 08 |
| | | | |

| | | | |
|---|---|---|---|
| 3 | a | List and explain the different files associated with every C program. | 08 |
| | b | What is a token? Explain the different types of tokens in C language with suitable example. | 08 |
| | | **OR** | |
| 4 | a | How C files are compiled and executed once you write a C program? Explain with a neat diagram. | 08 |
| | b | Write a C program to check whether a given four digit number is palindrome or not. | 08 |
| | | | |
| 5 | a | Differentiate between entry controlled and exit controlled loops with example. | 08 |
| | b | Write a C program to print all even numbers from 1 to n. | 08 |
| | | **OR** | |
| 6 | a | Why do you need arrays? Explain in detail the various ways of initializing a two dimensional array. | 08 |
| | b | Write a C program to delete an element from an array at specified position by the user. | 08 |
| | | | |
| 7 | a | Differentiate between character array and strings using example. | 04 |
| | b | Write a C program to find the length of a string without using string handling functions. | 06 |
| | c | Illustrate using an example declaration of function and definition of function. | 06 |
| | | **OR** | |
| 8 | a | Write a C program to concatenate two strings without using string handling function. | 08 |
| | b | Write a C program to explain the concept of caller and callee when user defined functions are used. | 08 |
| | | | |
| 9 | a | Write a C program to add the elements of the array passed as a parameter from the main function and print the result back in main function. | 08 |
| | b | Write a C program to define a structure called *EMPLOYEE*, with member variables as name, employee id and salary. Illustrate the following in the program:<br>i) Creating 3 variables for the defined structure.<br>ii) Initializing the values to all the structure variables using runtime initialization<br>iii) Print the details of the employee with highest salary among the three. | 08 |
| | | **OR** | |
| 10 | a | Write a C program to search an element in an integer array passed as a parameter from the main function and print the result back in main function. | 08 |
| | b | Write a C program to demonstrate nesting of structures. List the advantages of nesting of structures. | 08 |