

Basavarajeswari Group of Institutions

2022 SCHEME

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

USN

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Course Code

22POP13/23

First / Second Semester B.E. Degree Examinations, February 2025

PRINCIPLES OF PROGRAMMING USING C

Duration: 3 hrs

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Missing data, if any, may be suitably assumed

<u>Q. No</u>	<u>Question</u>	<u>Marks</u>	<u>(RBTL:CO:PI)</u>
<u>Module-1</u>			
1.	a. Discuss various generations of computers, highlighting features of each one.	06	(2 : 1 : 2.6.2)
	b. Illustrate with a neat block diagram, basic structure of a computer.	07	(2 : 1 : 2.6.2)
	c. Design an algorithm and draw flowchart for the following: (i) Area and Circumference of a circle (ii) To convert Celsius to Fahrenheit	07	(2 : 1 : 3.6.2)
(OR)			
2.	a. Discuss the steps involved in compiling and executing a C program.	06	(2 : 1 : 2.6.2)
	b. What is a token? Classify different types of tokens available in C language?	07	(2 : 1 : 2.6.2)
	c. Illustrate the concept of variables and its declaration with an example.	07	(2 : 1 : 3.6.2)
<u>Module-2</u>			
3.	a. Discuss conditional (Ternary) operator. Illustrate with example.	06	(2 : 2 : 2.6.2)
	b. Define precedence and associativity. Evaluate the following expressions based on this concept: (i) $2*((i/3)+4*(j-2))$ given $i=8, j=5$ (ii) $a \&\& b \parallel c \&\& (!b)$ where $a=2, b=4, c=3$	06	(2 : 2 : 2.6.2)
	c. Write program in C to compute roots of quadratic equation.	08	(2 : 2 : 3.6.2)
(OR)			
4.	a. Interpret the two-way selection (if, if-else, nested if-else) in C language with syntax and example.	06	(2 : 2 : 2.6.2)
	b. Differentiate between while, do-while and for loops in C with simple programs.	06	(2 : 2 : 2.6.2)
	c. Write a program in C language to print triangle pattern as follows: 1 1 2 1 2 3	08	(2 : 2 : 3.6.2)
<u>Module-3</u>			
5.	a. Interpret with example, how a two-dimensional array is declared and initialized.	06	(2 : 3 : 2.6.2)

- b.** What is function parameter? Classify different ways to pass parameters to a function with the help of a suitable example. **07** (2 :3 : 2.6.2)
- c.** Write a program in C to sort an array in ascending order using Bubble Sort. **07** (2 :3 : 3.6.2)

(OR)

- 6. a.** Explain with a program how arrays are passed as parameter to function? **06** (2 :3 : 2.6.2)
- b.** Interpret with example, the concept of recursive functions. **07** (2 :3 : 2.6.2)
- c.** Write a program to find the area of a triangle using a function in C. **07** (2 :3 : 3.6.2)

Module-4

- 7. a.** Explain how strings are represented in main memory. **06** (2 :4 : 2.6.2)
- b.** List built in string functions in C programming. Explain any two with example. **07** (2 :4 : 2.6.2)
- c.** Write a program in C to compare two strings without using string library functions. **07** (2 :4 : 3.6.2)

(OR)

- 8. a.** What is a pointer? Explain how the pointer variable declared and initialized. **06** (2 :4 : 2.6.2)
- b.** Write a program in C to find the sum and mean of all elements in an array using pointers. **07** (2 :4 : 2.6.2)
- c.** Explain different categories of pre-processor directives used in C. **07** (2 :4 : 3.6.2)

Module-5

- 9. a.** What is structure? Explain C syntax of structure declaration with example. **06** (2 :5 : 2.6.2)
- b.** Write a C-program using structures to read, write, compute average - marks and display the students scoring above and below the average marks for a class of N students. **07** (2 :5 : 2.6.2)
- c.** Explain structure within a structure with an example. **07** (2 :5 : 3.6.2)

(OR)

- 10. a.** Write a program to read data from files and writing data into files. **06** (2 :5 : 2.6.2)
- b.** What is enumeration variable? How are they declared? **07** (2 :5 : 2.6.2)
- c.** Discuss the different modes of operation on files with suitable example. **07** (2 :5 : 3.6.2)

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