

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

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Course Code

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First/Second Semester B.E. Degree Examinations, September/October 2022**PROBLEM SOLVING THROUGH C PROGRAMMING**

(Common to all Branches)

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*

Q. No	Question	Marks	(RBTL:CO:PI)
<u>Module - 1</u>			
1	a What is a computer? Explain different types of computers.	08	(1:1 : 1.4.1)
	b Distinguish between compilers and interpreters.	06	(2:1 : 2.6.4)
	c Discuss with the help of an algorithm to compute area and circumference of a circle.	06	(2:1 : 3.6.2)
(OR)			
2	a Explain the generations of computers.	08	(2:1 : 1.4.1)
	b Distinguish between system software and application software.	06	(2:1 : 2.6.4)
	c Draw a flow chart to compute area and perimeter of a triangle.	06	(1: 1: 3.6.2)
<u>Module - 2</u>			
3	a Explain the general structure of 'C' program with an example.	08	(2:2 : 2.5.2)
	b What is a token? Explain the different types of tokens available in 'C' language.	06	(2:2 : 1.4.1)
	c Demonstrate a 'C' program to swap two numbers without using third variable using arithmetic operators.	06	(1:2: 3.6.2)
(OR)			
4	a List different types of operators in 'C' and explain any <i>four</i> types in detail.	08	(2:2 : 1.4.1)
	b Explain the steps involved in compiling and executing any 'C' program.	06	(2:2 : 2.5.2)
	c Write a 'C' program to find the largest of three numbers using conditional operator.	06	(1:2: 3.6.2)
<u>Module-3</u>			
5	a Explain if, if-else, nested if-else and if-else-if with examples and syntax.	08	(2:3 : 2.5.2)
	b Distinguish between while, do-while and for loops in 'C'.	06	(2:3 : 2.5.2)
	c Demonstrate with the help of 'C' program to find the reverse of a <i>four-digit</i> integer number NUM and check whether it is PALINDROME or NOT.	06	(3:3: 3.6.2)

(OR)

- 6 a Explain different types of looping statements in 'C' with syntax. 08 (2:3 : 2.5.2)
- b Demonstrate with an example program the use of *break* and *continue* statements in 'C'. 06 (3:3 : 3.6.2)
- c Illustrate with the help of 'C' program to print half pyramid of alphabets using nested *for loop* as shown below: 06 (3:3 : 3.6.2)

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A
A B
A B C
A B C D
A B C D E
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Module-4

- 7 a Define array. Explain the declaration and initialization of single dimension array with example. 06 (2:4 : 1.4.1)
- b What are C functions? Explain with an example parameter passing techniques available in 'C'. 06 (2:4 : 2.5.2)
- c Demonstrate with the help of a 'C' program to implement string manipulation function (*length, copy, compare, concatenation*) without using built-in functions. 08 (3:4 : 3.6.2)

(OR)

- 8 a What is a string? Explain any *five* string manipulation library functions in 'C' with their syntax. 06 (2:4 : 2.5.2)
- b What is recursion? Discuss with a 'C' program to generate the Fibonacci series using recursion. 06 (2:4 : 3.6.2)
- c Illustrate with the help of a 'C' program that reads '*N*' integer numbers and arrange them in ascending order using *Bubble Sort* technique. 08 (3:4 : 3.6.2)

Module-5

- 9 a What is a structure? Explain the syntax of structure declaration and initialization with example. 08 (2:4 : 2.5.2)
- b Develop a Modular program using structures to perform the following tasks: 12 (3:5 : 3.6.2)
- i) Read Marks of five subjects for N number of students
 - ii) Calculate the Average Marks scored in each subject
 - iii) Find number of students scored above and below average marks.

(OR)

- 10 a Explain different categories of pre-processor directives used in 'C' programming. 08 (2:4 : 2.5.2)
- b Apply the modular programming construct using files to perform the following tasks: 12 (3:5 : 3.6.2)
- i) To find the sum of integer elements
 - ii) To find the mean of elements
 - iii) To find the standard deviation
