BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

USN		Course Code	2 1 P S P 1 3

First Semester B.E. Degree Examinations, May 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)

Module - 1

1	a	Identify different components of Computer and with neat diagram analyze importance of Central Processing Unit.	08	(1:1 : 1.4.1)
	b	Illustrate the importance of System Software and demonstrate how it is different from Application Software.	06	(2:1 : 2.6.4)
	c	What are algorithms? Generate an algorithm to find the greatest among three numbers.	06	(3:1 :2.5.2)

(OR)

2	a	Demonstrate the importance of Memory unit and discuss different types of memory units and their application.	08	(1:1 : 1.4.1)
	b	Outline the importance of Translators, Compilers and linkers.	06	(2:1 : 2.6.4)
	c	Describe how flow charts are beneficial to represent logic and develop an algorithm with the flow chart to find the average of three numbers taken as input from the user.	06	(3:1 : 2.5.2)

Module - 2

3	a	Demonstrate the different steps in execution of C Program.	04	(1:2 : 1.4.1)

	b	Determine the value of each of the following logical expression if a=5, b=10, and c=-6
		   i) a>b && a<c
		   ii) a==c || b>a
		   iii) b>15 && c<0 || a>0
		   iv) b>15 && c<0 || a> 0
			08	(2:2 : 3.6.2)

	c	Discuss with example various 'C' operators and develop a C program that illustrate bitwise and conditional operators.	08	(3:2 :3.6.2)

(OR)

4	a	Outline the different data types in 'C' and discuss the importance of user defined data type.	04	(1:2 : 1.4.1)

	b	Convert the following Algebraic expressions to C expressions and also demonstrate with example program
		  i. (m+n) (a+b)
		  ii. a+b+c/d+e
		  iii. Cos(a)2 x (1-rxsin(a)2))
			08	(3:2 : 2.5.2)

	c	Identify the importance of Type Casting and explain with sample C Program.	08	(2:2 :1.4.1)

Note: (RBTL - Revised Bloom's Taxonomy Level: CO - Course Outcome: PI - Performance Indicator)

Module-3

5	**a**	With syntax illustrate the working procedure of do-while loop structure.	06	(2:3 : 2.5.2)
	b	Define the syntax of elseif ladder. Develop C program to demonstrate the working of elseif ladder.	07	(2:3 : 2.5.2)
	c	Develop C program to calculate the simple interest for three set of values using for loop.	07	(3:3 : 3.6.2)

(OR)

6	**a**	Develop a C Program to generate the even numbers using loop structures.	06	(2:3 : 2.5.2)
	b	Develop a C program to receive quantity and rate as an input from the user and if quantity is greater than 1000 give the discount of 30% and calculate the total amount.	07	(3:3 : 3.6.2)
	c	With syntax demonstrate the working procedure of *case* and ***break*** statements in Switch.	07	(2:3 : 3.6.2)

Module-4

7	**a**	What are Arrays? With syntax illustrate the process of initializing the array during run time.	06	(2:4 : 1.4.1)
	b	With syntax explain the procedure of reading the strings from the terminal.	07	(2:4 : 2.5.2)
	c	Develop a C Program to demonstrate the working procedure of Function with return type and without arguments.	07	(3:4 :3.6.2)

(OR)

8	**a**	With syntax demonstrate the procedure of initializing the Two – Dimensional Arrays.	06	(2:4 : 2.5.2)
	b	Write a C program to utilize the function with return type and with arguments.	07	(2:4 : 3.6.2)
	c	What is recursive function? Develop a program to evaluate factorial of n numbers.	07	(3:4: 3.6.2)

Module-5

9	**a**	Summarize the importance of structure and write a program to declare the structure and access structure elements.	07	(2:4 : 2.5.2)
	b	Write a modular program to perform the following file operations: i) Create a new file ii) Write string value "Computer Engineering" in a file iii) Open the above existing file and display the content of file iv) Move file to a specific location v) Close a file	07	(3:5 : 3.6.2)
	c	What are pointers? Explain the process of declare and initialize the pointer variables.	06	(2:5 : 2.5.2)

(OR)

10	**a**	Discuss the importance of pre-processor directives in C.	06	(2:4 : 2.5.2)
	b	Write a modular program to perform the following: i) Read Roll No., Name and total marks of a student using structures ii) Display the content of the above structure	07	(3:5 : 3.6.2)
	c	Develop a program to illustrate the use of pointers in arithmetic operations.	07	(2:5 : 2.5.2)

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Note: (RBTL - Revised Bloom's Taxonomy Level: CO - Course Outcome: PI - Performance Indicator)