

Basavarajeswari Group of Institutions
BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
 (Autonomous Institute under Visvesvaraya Technological University, Belagavi)

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Course Code

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First Semester B.E. Degree Examinations, March/April 2024

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 the working of a computer. Explain with examples the role of I/O devices.	08	(2 : 1: 1.4.1)
	b. Explain the different types of tokens in C.	08	(2 : 1: 1.4.1)
	c. Explain the need for header files in C. How they are different from a normal C file?	06	(2 : 1: 1.4.1)
OR			
2.	a. Explain the basic structure of a C program with an example program.	08	(2 : 1: 1.4.1)
	b. Explain logical, assignment and relational operators in C, with relevant examples.	08	(2 : 1: 1.4.1)
	c. Discuss the different generations of computers.	06	(2 : 1: 1.4.1)
<u>MODULE – 2</u>			
3.	a. Explain decision making statements in C.	08	(2 : 2 : 2.5.2)
	b. Distinguish between exit-controlled loop and entry-controlled loop in C.	08	(2 : 2 : 2.5.2)
	c. Write a C program to check whether a given number is palindrome or not.	06	(3 : 2 : 3.6.2)
OR			
4.	a. With proper syntax for each, explain the various types of loops in C.	08	(2 : 2 : 2.5.2)
	b. Discuss briefly the use of <i>continue</i> and <i>goto</i> statements in C with proper examples for each.	08	(2 : 2 : 2.5.2)
	c. Write a C program to print the following patterns using nested <i>for loop</i> :	06	(3 : 2 : 3.6.2)
	<div style="display: flex; justify-content: space-around; margin-top: 10px;"> <pre> 1 1 2 1 2 3 </pre> <pre> 1 2 2 3 3 3 </pre> </div>		
	Implement both patterns <i>for 'n' rows</i> .		
<u>MODULE – 3</u>			
5.	a. With relevant examples explain the various ways of declaring, initializing and reading elements of a single dimensional array.	08	(2 : 3 : 1.4.1)
	b. Explain any three storage classes in C with example for each type.	08	(2 : 3 : 3.6.2)
	c. Write a C program to read 'N' integer numbers and search a given number using <i>Binary search</i> technique.	06	(3 : 3 : 2.5.2)
OR			
	a. What are functions? Discuss the need for functions in programming using	08	(2 : 3 : 2.5.2)

6. appropriate examples. 08 (2 : 3 : 3.6.2)
 b. Explain recursion with an example program. 06 (3 : 3 : 3.6.2)
 c. Write a C program to read '*N*' integer numbers and search a given number using *Linear search* technique.

MODULE – 4

7. a. With appropriate examples discuss the various ways of declaring, initializing and reading a string in C. 08 (2 : 4 : 2.5.2)
 b. Write a program to implement the following functions: *getchar ()*, *putchar ()*, and *atoi ()*. 08 (3 : 4 : 2.5.2)
 c. What is a pointer? With relevant examples explain how a pointer is declared and initialized. 06 (2 : 4 : 2.5.2)

OR

8. a. What is a string? Explain the following string built-in functions: *strcat ()*, *strcpy ()*, *gets ()* and *puts ()*. 08 (2 : 4 : 2.5.2)
 b. Write a C program to implement *string length* and *string compare* without using built-in string functions. 08 (3 : 4 : 3.6.2)
 c. Discuss with appropriate example, parameter passing to functions using pointers. 06 (2 : 4 : 2.5.2)

MODULE – 5

9. a. Differentiate between a structure and a union in C. Also write their declaration and initialization syntax. 08 (2 : 5 : 2.5.2)
 b. Write a C program to create a structure employee having salary and employee id as its members. Display the employee details and average salary of *N* employees. 08 (3 : 5 : 3.6.2)
 c. What is the need of a file? With appropriate syntax and example explain basic file operations in C. 06 (2 : 5 : 2.5.2)

OR

10. a. With syntax discuss how a union is declared and initialized. Give an example to show it. 08 (2 : 5 : 2.5.2)
 b. Write a C program that reads the names of an input and an output file, and copies contents of input into output file 08 (3 : 5 : 3.6.2)
 c. Why do we need enumerations? Discuss with relevant examples the use of enum in C, with variable declaration and initialization. 06 (2 : 5 : 2.5.2)

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