

## GUJARAT TECHNOLOGICAL UNIVERSITY

M.SC(IT)- INTEGRATED – SEMESTER I- EXAMINATION –WINTER-2024

**Subject Code: 1310503**

**Date: 21/12/2024**

**Subject Name: Fundamentals of Computer and Basics of Programming**

**Time:10:30 AM TO 01:00 PM**

**Total Marks: 70**

**Instructions:**

1. Attempt all questions.
2. Make Suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of simple calculators and non-programmable scientific calculators are permitted.

- Q.1**
- (a) Describe the types of software with example. **03**
- (b) Differentiate the following terms: **04**
- 1) compiler and interpreter
  - 2) procedure oriented language and object oriented language

- (c) Draw basic block diagram of computer. List out and explain its components. **07**

- Q.2**
- (a) Describe library function and user defined function **03**
- (b) Define below terms: **04**
- 1) Class & Object
  - 2) Polymorphism
  - 3) Inheritance
  - 4) Encapsulation
- (c) Write a C program to input an integer number and check last digit of number is even or odd. **07**

**OR**

- (c) Write a C program to implement multi-dimensional array and its operation. **07**

- Q.3**
- (a) Explain array of pointers with suitable example **03**
- (b) Explain file management functions with example **04**
- (c) Explain entry controlled and exit controlled loop with proper syntax and example. **07**

**OR**

- Q.3**
- (a) What is array? Define the types of array with example. **03**
- (b) Discuss advantages and disadvantages of pointer. Also explain pointer to pointer. **04**
- (c) Write algorithm or flowchart for finding maximum number out of three numbers. **07**

- Q.4**
- (a) Describe unconditional goto statement with example **03**
- (b) Explain basic structure of C program. **04**
- (c) Explain call by value and call by reference with examples in brief. **07**

**OR**

- Q.4**
- (a) Explain the following terms **03**
- 1) nested if-else statement
  - 2) break statement
- (b) Define recursion. Explain the advantages of recursion **04**

	(c)	Define loop. List out the types of loop and explain any two with example.	07
<b>Q.5</b>	(a)	What is function? List out and explain user-defined functions.	03
	(b)	Define array. Explain with suitable example how to declare and initialize multi Dimensional array	04
	(c)	Write a C program to multiply two n x n matrix	07
	<b>OR</b>		
<b>Q.5</b>	(a)	Explain getch(), getchar(), gets() with example.	03
	(b)	Explain type conversion with example.	04
	(c)	List out the features of c language and describe the structure of c program with example.	07

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