

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-I & II (NEW) EXAMINATION – SUMMER 2024

Subject Code:3110003

Date:12-07-2024

Subject Name:Programming for Problem Solving

Time:02:30 PM TO 05:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Draw neat Block Diagram illustrating the Anatomy of a Computer System.	03
	(b) Illustrate an Algorithm to check whether the given year is leap year or not.	04
	(c) Define Flow chart, List the rules for designing a Flow chart and Rephrase the merits and demerits of flow chart.	07
Q.2	(a) List the rules to assign a name to an Identifier (Variable)	03
	(b) Illustrate the basic structure of a C Programs and highlight usual sections of <i>main</i> function.	04
	(c) Construct a C program which receives number of days as input and converts them in to Year, Months and Days,	07
	OR	
	(c) Construct a C program to swap the values of two integers with use of only two variables.	07
Q.3	(a) Contrast the Entry Control loop and Exit Control loop.	03
	(b) Construct a C program to find the largest number amongst three integers entered.	04
	(c) Construct a C program to check if entered integer is a prime number or note.	07
	OR	
Q.3	(a) Debug the following codes and show the output for this: <pre>For (i=0 ; i<=50 ; i++); { printf("\n %d" , i) }</pre>	03
	<i>*consider header files and declaration of variable is done.</i>	
	(b) Explain nested if-else statement with suitable example.	04
	(c) Construct a C program to print following pattern <pre>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15.....</pre>	07

- Q.4** (a) List the types of Array. **03**
 (b) Summarize the methods for initialization of One-Dimensional array. **04**
 (c) Construct a C program to multiply 3X3 matrix. **07**
- OR**
- Q.4** (a) List the application of *gets*, *getchar* and *puts* functions. **03**
 (b) Summarize the method for Declaration, initialization and Printing on screen of a String. **04**
 (c) Define a Structures which contains details of a Cricketer: **07**
- Name of Player:
 - Team name:
 - Total run scored:
 - Batting average:
- Q.5** (a) Write True / False against following statements: **03**
- 1) Pointer is a variable which holds address of location where value of other variable is stored.
 - 2) Pointer holds the address in form of float or integer.
 - 3) The address of a variable can be stored in two or more pointers.
- (b) List the categories of User Defined Functions and Discuss any one of these. **04**
 (c) Construct a C program which used a user define function that receives an integer and returns square and cube of it and prints in main function. **07**
- OR**
- Q.5** (a) What are the arithmetic operators that are permitted on pointers? **03**
 (b) Show the use of *Malloc*, *Calloc*, *Free* and *Realloc* in context of Dynamic memory allocation. **04**
 (c) List and discuss file handling functions used in C. **07**
