Seat No.:	Enrolment No
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## GUJARAT TECHNOLOGICAL UNIVERSITY MCA Integrated - SEMESTER- I • EXAMINATION - WINTER 2016

Sul Tir	bject me:10 truction 1. 2.	Attempt all questions.  Make suitable assumptions wherever necessary.	
Q.1		Answer the following:  (i) is a diagrammatic representation of an algorithm.  (ii) In 'C' programming language, symbol is used for single line comment.  (iii) The size of "int" data type in a 16 bit machine is byte(s).  (iv) is an exit controlled loop in 'C' programming language.  (v) In 'C' programming language, the default return type of a function is  (vi) preprocessor command/directive is used to create a symbolic constant.  (vii) A matrix having a lot of elements with a value zero is called	07
	<b>(b)</b>	Explain generations of programming languages in brief.	07
Q.2	(a) (b)	What are constants? State the types of constants available in 'C' programming language and also explain each type giving appropriate examples. State the categories of operators available in 'C' programming language and explain the terms "precedence" and "associativity" along with appropriate example.  OR	07 07
	(b)	Explain the concept of type conversion and typecasting with respect to 'C' programming language.	07
Q.3	(a) (b)	What is a loop? Explain the working of a nested loop using a proper example. Explain the characteristics of switch case statement along with its syntax and an appropriate example.  OR	07 07
Q.3	(a) (b)	Write a program in 'C' to display the factorial of numbers from 1 to n (where n is a value given by the user).  Explain the types of user-defined functions that can be created based on the types of parameters and return types. Also give an example for each type.	07
Q.4	(a) (b)	Compare the features of the keywords "auto", "static", "register", and "extern" available in 'C' programming language.  What do you mean by a recursive function? Explain the working of a recursive function along with appropriate example.  OR	07 07
Q.4	(a)	Write a short note on two-dimensional arrays in 'C' programming language by explaining its syntax for declaration and initialization along with an appropriate example.	07
	<b>(b)</b>	Write an user-defined function in 'C' to search an element in an integer array. If found, the function should return the index of first occurrence of the element.	07

Otherwise, it should return -1.

- Q.5 (a) State the syntax for declaring and initializing an array of strings. Explain how array of strings are represented in the computer memory using appropriate example.
  - (b) Write a program in 'C' language to accept a 3x3 matrix from the user and transpose the matrix without using a second matrix.

## OR

- Q.5 (a) Write a program in 'C' language to check whether a string provided by the user is a palindrome or not without using any string manipulation library function.
  - (b) What is a Scanset? Mention the syntax of a Scanset and explain its use with the help of an appropriate example.

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