

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA SEM-I Examination- Jan.-2012

Subject code: 610001**Date: 02/01/2012****Subject Name: Fundamentals of Programming (FOP)****Time: 10.30 am-1.00 pm****Total marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a) Do as directed : 07
- (i) What is data type?
 - (ii) What do you mean by lifetime of a variable?
 - (iii) Give the size and range of unsigned int variable.
 - (iv) What is the use of Linker?
 - (v) What do you mean by declaring a variable and defining a variable?
 - (vi) What do you mean by unary operator?
 - (vii) What is word boundary?
- (b) Answer the following questions :
- (i) List the disadvantages of a Singly Linked List 02
 - (ii) Give the structure of a doubly linked list node 01
 - (ii) How Bitwise OR is working? Explain with an example. 02
 - (iv) What is the difference between function and a macro? 02
- Q.2 (a) Explain with suitable example : return, break and continue statements. Also compare break and continue. 07
- (b) (i) What is String? How to store it in 'C' program? 02
- (ii) Write a 'C' program to count no. of occurrences of a given character in a given string 05
- OR
- (b) (i) Explain any 4 string functions defined in string.h file. 02
- (ii) Write a 'C' program to sort an array elements in ascending order by using bubble sort. 05
- Q.3 (a) (i) What is function prototype, function definition and function call? – explain with an example. 05
- (ii) Write a function that can have multiple return statements. 02
- (b) (i) Explain the use of indirection operator and address operator. 02
- (ii) Write short note on Call by address 05
- OR
- Q.3 (a) (i) What is Recursive function? How it is implemented by using stack? Explain with example. 05
- (ii) Write short note on nesting of functions 02
- (b) (i) Write short note on void pointer 02
- (ii) Compare Array name and pointer. Also explain array of pointers and its use with array of strings. 05

Q.4	(a)	(i) Explain Array within a structure and Array of structure with suitable example.	05
		(ii) Which are the naming conventions for Identifier in C?	02
	(b)	(i) Explain following functions : fgetc(), fgets(), fscanf() and flushall()	04
		(ii) Discuss in brief : signed, short and long.	03
OR			
Q.4	(a)	(i) Define a structure named CityInfo that stores city name and city code. Write a C-program that uses CityInfo structure to store information of 10 cities. Program will take a city code and will display the appropriate city name.	05
		(ii) Write short note on Relational operators in C.	02
	(b)	(i) What is the use of File in C-program? How to open and close a File?	04
		(ii) Write short on Conditional operator.	03
Q.5	(a)	(i) What is File Mode? List and explain meaning of all file opening modes.	04
		(ii) What is argc and argv in command line arguments? Explain with suitable example.	03
	(b)	(i) Explain enum statement with suitable example	02
		(ii) Write a C function that inserts a node at a specific position in a singly linked list. Use this function in a program.	05
OR			
Q.5	(a)	(i) What do you mean by Sequential and Random Access file? Explain fseek(), ftell() and rewind() functions.	04
		(ii) Write a macro to find out X^3 . Write a program to use this macro.	03
	(b)	(i) Explain the use of a . (dot) operator and -> operator with example.	02
		(ii) Write a C function that deletes a node from a specific position in a singly linked list. Use this function in a program.	05
