

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER-I • EXAMINATION – SUMMER • 2015

Subject Code: 2610001

Date: 02-05-2015

Subject Name: Fundamentals of Programming

Time: 10:30 am - 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.

Q.1 (a) Define algorithm and flowchart. Draw the basic symbols of flowchart with their purpose. Draw a flowchart to find the reverse of a number. **07**

(b) What are c tokens? Explain each of them with example. **07**

Q.2 (a) What is preprocessor? What are its functions? Explain any 5 preprocessor directives with example. **07**

(b) 1. What do you mean by type conversion? How type conversions are carried out in c? Explain in detail. **04**

2. Explain the enumeration data type with example. **03**

OR

(b) What is a function? How it is used? What are its advantages? Write a program to swap the value of two variables using pointers. **07**

Q.3 (a) What is an operator? List the different types of operators. Explain the relational and bitwise operators in detail **07**

(b) What is recursion? What are its advantages? Write a recursive function to display the series 1 1 2 3 5 8 **07**

OR

Q.3 (a) What is storage class? Explain each of them with example **07**

(b) What is a pointer? What are the advantages of using pointers? Differentiate between null and void pointers. **07**

Q.4 (a) How pointer can be used with arrays. Differentiate between array name and pointer. What are the advantages of linked list over arrays? **07**

(b) What is nested structure? Explain array within structure and array of structures, write a program to show the use of each. **07**

OR

Q.4 (a) Write a program to insert a node in a linked list. **07**

(b) What is a multidimensional array? How can it be initialized? What are array of strings. Write a program to sort an array of strings using bubble sort. **07**

Q.5 (a) Differentiate between text and binary files. Explain how records can be randomly accessed using the functions fseek(), ftell() and rewind() functions. What is the use of feof(). **07**

(b) What is dynamic memory allocation? What are its advantages over static allocation? Describe malloc, calloc & realloc functions. What is the difference between malloc and calloc. **07**

OR

- Q.5 (a)** Explain command line arguments. What are its advantages? Write a program to count the number of characters and lines in a text by using command line arguments. **07**
- (b)** Write a program that opens an existing file and copies it to a new text file with all lower case letters changed to capital letters and all other characters unchanged **07**
