

GUJARAT TECHNOLOGICAL UNIVERSITY**MCA - SEMESTER-I • EXAMINATION – SUMMER 2013****Subject Code: 610001****Date: 04-06-2013****Subject Name: Fundamentals of Programming****Time: 10:30am to 13:00pm****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) Answer the following questions by selecting an appropriate option. 07

- (1) Which of the following is not a library function in C?
(a) printf() (b) scanf() (c) main() (d) getch()
- (2) Which of the following is not a valid keyword in C?
(a) case (b) constant (c) char (d) continue
- (3) Which of the following is not a valid variable name in C?
(a) Total5 (b) total_ (c) _total (d) 5Total
- (4) Which is the valid declaration in C?
(a) INT a[5]; (b) int A[5]; (c) int a[]; (d) int a[2,2];
- (5) The name of operator << is?
(a) Less than
(b) Greater than
(c) Shift left
(d) Shift right
- (6) What is a pointer?
(a) Keyword
(b) Constant
(c) Variable
(d) String
- (7) Which function is used to obtain the current position of file pointer?
(a) fopen() (b) fseek() (c) feof() (d) ftell())

(b) Answer the following questions. 07

- (1) How many bytes are allocated by a float variable?
- (2) What will be the output of the following program segment?
int a= 10;
if (a = 0);
printf("True\n");
printf("a = %d\n", a);
- (3) Give the data type whose variable may contain a value of any member of symbolically declared set of values?
- (4) What is linked list?
- (5) What is sizeof?
- (6) Define : Compiler
- (7) What is the use of typedef?

Q.2 (a) Define algorithm and flow-chart. Explain basic symbols of. flow-chart and draw a flow-chart to obtain the sum of first N natural numbers. 07

- (b) What is data type? Explain primitive data types with size and range. **07**
- OR**
- (b) Give the classification of program control statements. Explain various constructs of if statement using flow-chart and example. **07**
- Q.3** (a) Explain for statement with syntax, flow-chart and example. Write a program using for loop to print the numbers from 1 to 100 which are divisible by 2 or 5. **07**
- (b) Explain logical operators in C with example. **03**
- (c) Write a program to find out the length of a given string using user defined function. **04**
- OR**
- Q.3** (a) What is function? What are the advantages of using functions in a program? Explain function prototype declaration, function definition and function call with suitable example. **07**
- (b) Explain unconditional control statements in C. **03**
- (c) Write a program to find out the sum of digits of a given integer number. **04**
- Q.4** (a) Explain the storage structure and initialization of 2 dimensional array with example. Write a program that will receive m x n array and obtain the sum of all its elements. **07**
- (b) Explain static storage class with example. **03**
- (c) Write a program to find out factorial of the given number using recursion. **04**
- OR**
- Q.4** (a) What is pass by value and pass by reference? Explain it with the example of swapping the values of two variable using function. **07**
- Q.4** (b) Explain : union **03**
- (c) Write a program to find out the maximum from the given N element array. **04**
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- Q.5** (a) Write a program to copy one file to another. File names should be given as command line arguments. **07**
- (b) Explain following functions: **03**
(1) malloc () (2) calloc () (3) free ()
- (c) Explain the process of inserting and deleting a node form a given linked list by suitable example. **04**
- OR**
- Q.5** (a) Write a program that will create an array of 10 students using following structure Student **07**
Roll_no, Name, Mark1, Mark2, Mark3, Total.
Calculate the total marks by adding all three subjects' marks for all 10 students and display the records line wise in following format.
Roll Number Name of Student Subject1 Subject 2 Subject 3
Total
- (b) Explain following functions: **03**
(1) fopen () (2) fclose() (3) fseek ()
- (c) Explain #include and #define with example. **04**
