

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA INTEGRATED- SEMESTER-II • EXAMINATION – SUMMER 2017

Subject Code: 4420602

Date: 02/06/2017

Subject Name: Advanced C Programming (Adv – C)

Time: 10:30 A.M. to 1:00 P.M.

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 : **03**
i. Explain fseek () and ftell () functions. **04**
ii. Differentiate between int (*p) () and int (*p)[3]. **07**
(b) Explain any four functions used for writing in the file. **07**
- Q.2 (a)** Create a structure having data member customer name, address and mobile no. **07**
Write a program to display details of all customers in ascending order of customer name.
(b) Differentiate between function and macro. Create a macro and function for swapping two numbers and explain the difference among them. **07**
- OR**
- (b)** Explain dynamic memory allocation and static memory allocation in detail. **07**
- Q.3 (a)** Write an algorithm to perform push, pop and peep operation on stack of an integer. **07**
(b) Write down array and linked representation of Tree with the help of suitable example. **07**
- OR**
- Q.3 (a)** Write down the various operations and applications of a queue. **07**
(b) Explain pre order, in order and post order traversal of binary tree with the help of suitable example. **07**
- Q.4 (a)** Write Short note on following **02**
1. In degree and out degree **03**
2. Height and depth of tree **02**
3. Directed and undirected Graph **02**
(b) Write a program to perform following operations on singly linked list **04**
i. Add node at end of list **03**
ii. insert node after any node **03**
- OR**
- Q.4 (a)** Differentiate between array and linked list. Write down the various applications of linked list in brief. **07**
(b) Write short note on command line arguments and bit field. **07**
- Q.5 (a)** Differentiate between **04**
i. Structure and union **03**
ii. Stack and Heap memory area **03**
(b) Write a program to print number of character and number of lines of a given file. **07**

OR

Q.5 (a) Write down the output of following code snippet

(i) `void main()` **03**
`{`
`int a[]={1,2,3,4,5};`
`int *p=a,*q=a[4],i=0,j=4;`
`printf(“%d %d”,i[q]-p[j]);`
`}`

(ii) `#define swap(a,b) t=a;a=b;b=t;` **04**
`void main()`
`{`
`static int a=10,b=20,t;`
`if(a>b)`
`swap(a,b);`
`printf(“%d , %d , %d“,a,b,t);`
`}`

(b) Write short note on following:

- i. pointer to pointer **03**
- ii. # and ## operator **04**
