

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY****MCA - SEMESTER- I EXAMINATION – SUMMER 2018****Subject Code: 610001****Date: 19/05/2018****Subject Name: Fundamentals of Programming****Time: 02:30 P.M. to 05:00 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 :  
i. Explain term constant, symbolic constant and literal. **03**  
ii. Differentiate between algorithm and pseudo code. **04**  
(b) Explain various symbols of flow chart and draw a flowchart to find maximum of three numbers. **07**
- Q.2** (a) Differentiate between following:-  
i. Constant pointer and pointer to constant **03**  
ii. `int *p[2]` and `int (*p)[2]` **04**  
(b) What is an array? Write a program to sort n element using user define function. **07**
- OR**
- (b) Write a program to multiply two matrices using user define function. **07**
- Q.3** (a) What is recursion? Write a recursive function to convert any decimal number to binary number. **07**  
(b) Explain various storage class in detail. **07**
- OR**
- Q.3** (a) Explain malloc, calloc, realloc and free function in detail. **07**  
(b) Differentiate between macro and function with suitable example. **07**
- Q.4** (a) Differentiate between enum, structure and union with suitable example. **07**  
(b) Write a program to perform following operations on singly linked list  
i. Add node at end of list **03**  
ii. Delete node **03**  
iii. Search node **01**
- OR**
- Q.4** (a) Differentiate between array name and pointer. Write a program sort string array using pointer. **07**  
(b) Write short note on command line arguments and its usage and also write a program to make a DOS command “copy con” which shows the contents of given file. **07**
- Q.5** (a) Differentiate between  
i. `ftell()` and `fseek()` functions **02**  
ii. void pointer and NULL pointer **02**  
iii. binary file and text file **03**  
(b) Explain `#ifdef`, `#undef` and `#ifndef` preprocessor with example **07**

**OR**

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

(i) 

```
void main()
{
    int a[]={ 1,2,3,4,5 };
    int *x=a,*y=a[4];
    printf("%d",y-x);
}
```

**03**

(ii) 

```
#define swap(a,b) t=a;a=b;b=t;
void main()
{
    static int a=1,b=2,t;
    if(t)
        swap(a,b);
    printf("%d , %d , %d",a,t,b);
}
```

**04**

**(b)** Write short note on following:

- i. bitwise operator
- ii. #pragma
- iii. bitfield

**03**

**02**

**02**

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