

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA– SEMESTER –III EXAMINATION –SUMMER-2019

Subject Code:3630002

Date: 15-05-2019

Subject Name: Basic Computer Science-I

Time:02.30 pm to 5.00 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) What is data structure? Explain types of data structure in detail. **07**
(b) What is asymptotic notation? List and explain with e.g. **07**
- Q.2** (a) Write algorithms of insert and delete operation in singly linked list. **07**
(b) Write algorithms of push and pop operations in stack. **07**
- OR**
- (b) Write algorithms of insert and delete operations in circular queue. **07**
- Q.3** (a) Convert following expression into postfix. **07**
 $A * B * C / D + E$
(b) Explain quick sort with algorithm. **07**
- OR**
- Q.3** (a) Explain binary search with algorithm. **07**
(b) Compare time complexity/space complexity of all sorting techniques. **07**
- Q.4** (a) Explain in Brief Database Design step of Database Life Cycle **07**
(b) Explain primary key, foreign key and unique key with e.g. **07**
- OR**
- Q.4** (a) Explain inner join, outer join and self join in detail. **07**
(b) Explain DML and DDL. **07**
- Q.5** (a) Explain sub query in SQL with e.g. **07**
(b) Explain creating view and creating index with suitable example. **07**
- OR**
- Q.5** (a) Explain groupby, having, and sorting in detail with e.g. **07**
(b) Explain grant and revoke with e.g. **07**
