

Roll No. ....

**D-3841****B. C. A. (Part II) EXAMINATION, 2020****(Old Course)**

Paper Fourth

DBMS (ORACLE, SQL)

**(202)***Time : Three Hours ]**[ Maximum Marks : 100**[ Minimum Pass Marks : 40*

**Note :** Attempt any *two* parts from each Unit. All questions carry equal marks.

**Unit—I**

1. (a) What are the responsibilities of DBA ? Explain.
- (b) What are the advantages of DBMS over traditional file system ?
- (c) Explain data model and its types.

**Unit—II**

2. (a) Explain E-R model with different elements of E-R diagram.
- (b) Explain specialization, generalization and aggregation with example.
- (c) What are the keys ? Explain different types of keys with suitable example.

**(A-64) P. T. O.****Unit—III**

3. (a) Differentiate between the following :
  - (i) Natural join and equi join
  - (ii) Outer join and full outer join
  - (iii) Left outer join and right outer join
- (b) What are the different types of integrity constraints ? Explain by giving suitable example.
- (c) Explain about the following relational algebra operators by giving suitable example :
  - (i) Union
  - (ii) Division
  - (iii) Rename
  - (iv) Set difference

**Unit—IV**

4. (a) What is BCNF ? How does it differ from 3NF ? Explain with example.
- (b) What are the inference rules for multivalued dependencies ? Explain.
- (c) Explain the following with example :
  - (i) Lossless join dependency
  - (ii) Dependency preservation

**Unit—V**

5. (a) Consider the relational database as shown below :  
 Employee (employee-name, street, city)  
 Work (employee-name, company-name, salary)

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Company (company-name, city)

Manager (employee-name, manager-name)

Give the SQL statements for the following :

- (i) Find the names and cities of residence of all employee who work for State Bank of India.
  - (ii) Find the names of all employees who live in the same city and on the same street as do their managers.
  - (iii) Find the names of all employees who earn more than every employee of Oriental Bank of Commerce.
  - (iv) Assume the Companies may be located in several cities. Find all companies located in every city in which Oriental Bank of Commerce is located.
- (b) Explain order by and group by clause with suitable example.
- (c) Give SQL DDL statements with suitable example.