



**Raja Lakhamagouda Science Institute (Autonomous),  
Belagavi.**

**Fifth Semester BCA Degree Examination Aug.- 2021  
E55: DATA BASE MANAGEMENT SYSTEM**

Duration: 3 Hrs

Max Marks: 70

**Instructions to candidates:**

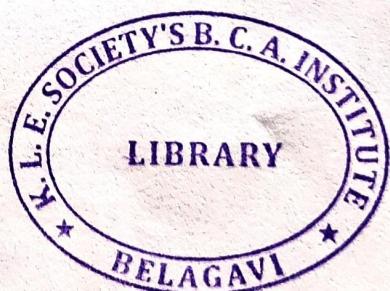
1. Attempt all Questions.

**I. Answer any FIVE of the following:****5X2=10**

1. Define DBMS.
2. What is data model?
3. Define Composite Attribute.
4. What is Cardinality ratio?
5. Define the term Tuple. Give example on tuple.
6. What is unique key?
7. Write syntax of Update command

**II. Answer any SIX of the following :****6X5=30**

8. Briefly explain any five advantages of DBMS.
9. Explain two Tier Architecture of DBMS.
10. Discuss types of attributes in DBMS.
11. Draw an ER diagram of a University database [consider all the necessary constraints].
12. Explain the concept of JOINS in detail.
13. Explain types of Functional Dependency.
14. Explain states of transaction with diagram
15. Explain Group Functions in SQL.

**III. Answer any THREE of the following:****3X10=30**

16. Explain DBMS Interfaces.
17. Write note on;
  - a) Degree of Relationship.
  - b) Classification of DBMS.
18. What is normalization? Explain 1NF, 2NF.

19.Explain concurrent execution problem.

20.Consider the insurance database given below. The primary keys are underlined and the data types are specified.

PERSON ( driver id:string , name:string , address:string )

CAR ( regno:string , model:string , year:int )

ACCIDENT ( report number:int , accd\_date:date , location:string )

OWNS ( driver\_id:string , regno:string )

PARTICIPATED ( driver\_id:string , regno:string , report\_number:int , damage\_amount:int )

a) Create above table and insert at least 5 values.

b) Query to update the damage amount for the car with a specific register number in the accident with report number between 1 and 200.

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**Raja Lakhamagouda Science Institute (Autonomous),  
Belagavi.****Fifth Semester BCA Degree Examination Nov - 2018  
E55: DATA BASE MANAGEMENT SYSTEM**

Duration: 3 Hrs

Max Marks: 70

**Instructions to candidates:**

1. Attempt all Questions.

**I. Answer any FIVE of the following:****5X2=10**

1. Define DBMS.
2. Define schema and instances.
3. What are weak entity types?
4. List Characteristics of Relations.
5. What is Transitive dependency?
6. What is Transaction? Give example.
7. List different keys and define any one?

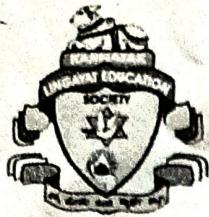
**II. Answer any SIX of the following :****6X5=30**

8. With neat diagram explain 3 Schema Architecture.
9. Discuss different types of attributes.
10. Write a syntax and example for SELECT and PROJECT.
11. Explain Functional Dependency.
12. Explain desirable properties of transaction.
13. Briefly explain DBMS languages?
14. Explain cardinality ratio of a relation?
15. Explain the concept of set theory in relational algebra?

**III. Answer any THREE of the following:****3X10=30**

16. Briefly explain Advantages of database.
17. Write note on
  - a) Participation constraint
  - b) JOINS
18. Explain 1 NF ,2 NF and 3 NF with example.
19. What are the types of transaction failure? Explain states of transaction with diagram.
- 20.a) Explain notations in ER-diagram.  
b) Write syntax for CREATE and UPDATE table statement and give example.

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**Raja Lakhamagouda Science Institute (Autonomous),  
Belagavi.**

**Fifth Semester BCA Degree Examination Nov - 2017  
E55: DATA BASE MANAGEMENT SYSTEM**

Duration: 3 Hrs

Max Marks: 70

**Instructions to candidates:**

1. Attempt all Questions.

**I. Answer any FIVE of the following:**

**2X5=10**

1. List the Actors behind the scene
2. Define a data model
3. What is a Key attribute, give example?
4. Define entity give an example
5. List the participation constructs on binary relationship types
6. Define normal form of a relation
7. Explain the aggregate function COUNT, AVERAGE and SUM.

**II. Answer any SIX of the following :**

**5X6=30**

8. Define data independence and explain the two types
9. Explain the ACID properties of a transaction.
10. Define degree of a relationship type. Explain the two types with an example for each.
11. Explain views in SQL with an example.
12. Explain the first normal form.
13. Explain the log records in a system log.
14. List the three conditions when a schedule is said to conflict, define a schedule with an example.
15. List and explain the workers behind the scene.

**III. Answer any THREE of the following:**

**10X3=30**

16. Create the following tables and insert 5 records.

Employee (ENO, ENAME, SALARY)

DEPARTMENT (DNO, DNAME, DLOCATION)

PROJECT (PNO, PNAME, DNO)

WORKS\_ON(ENO, PNO, HRS)

a) Display the department name for DNO=101

b) Display the hours how much each employee works along with ENAME.

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**Raja Lakhamagouda Science Institute (Autonomous),  
Belagavi.**



**Fifth Semester BCA Degree Examination Dec- 2016**  
**E55: DATA BASE MANAGEMENT SYSTEM**

**Duration: 3 Hrs****Max Marks: 70****Instructions to candidates:**

1. Attempt all Questions.

**I. Answer any FIVE of the following:****2X5=10**

1. Define Data Base Management System.
2. List out the actors on the screen.
3. Define database schema.
4. Define an entity and give an example.
5. Define relational schema with example.
6. Define functional dependency and give example.
7. Define Locking.

**II. Answer any SIX of the following :****5X6=30**

8. Explain the advantage of DBMS.
9. List out the categories of data models and explain any one.
10. With neat diagram explain the notations used for drawing E – R diagrams.
11. Explain 'RENAME' Operation in relational algebra with example.
12. What is Normalization? Explain 1NF, 2NF and 2NF.
13. Explain the reasons for failure of a transaction.
14. Describe Binary Locks and shared Locks in Two – Phase Locking Technique.
15. Write a note on Views in SQL.

**III. Answer any THREE of the following:**

10X3=30

**16.** List out the different types of attributes and explain each with example.

**17.** Explain the different types of 'JOIN' Operations with example.

**18.** Explain time stamp ordering algorithm.

**19.** Design the following database and solve the queries.

PERSON (driver – id, name, address)

CAR (reg – no, name, year)

ACCIDENT (report – number, date1, location)

PARTICIPATED (# drive – id, # reg-no, #report-number, damage amount)

**a)** Enter atleast 5 tuples for each relation.

**b)** Update damage amount for car with specific 'reg-no' in the 'ACCIDENT' with report-number 12 to 25000.

**20.** Write a note on the following

**a)** Three – tier Architecture.

**b)** Aggregate Functions.

**c)** Optimistic Concurrency Control Techniques.

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**Raja Lakhamagouda Science Institute (Autonomous),  
Belagavi.****Fifth Semester BCA Degree Examination Nov- 2015****E52: DATA BASE MANAGEMENT SYSTEM**Duration: **3 Hrs**Max Marks: **70****Instructions to candidates:**

1. Attempt all Questions.

**I. Answer any FIVE of the following questions:****2X5=10**

1. Define Database.
2. List types of Database Users.
3. List types of attributes.
4. List Relational Model Constraints.
5. Write the syntax for Selection and Projection operations of Relational Algebra.
6. Define Normal Form.
7. Define transaction.

**II. Answer any SIX of the following :****5X6=30**

8. Explain briefly three level schema architecture.
9. List all actors on the scene.
10. Draw the neat ER Diagram of Company Database.
11. Explain briefly types of anomalies.
12. List Inference Rules for Functional Dependency.
13. Explain briefly the life cycle of transaction.
14. Explain briefly the ACID properties of transaction.
15. Discuss Locking techniques for Concurrency Control.

**III. Answer any THREE of the following:****10X3=30**

16. Explain relational Model Constraints.
17. Write the syntax for the following with Example
  - a) CREATE
  - b) INSERT
  - c) DELETE
  - d) UPDATE
  - e) SELECT

18. Design the DB and Solve the Queries.

EMPLOYEE (ENO, NAME, SALARY, DNO)

DEPARTMENT(DNO, DNAME, DLOCATION)

PROJECT(PNO, PNAME, DNO)

WORKS\_ON(ENO,PNO, HRS)

1. Select Employees who are working for PNO=1
2. Generate suitable Report.

19. Explain with example types of Entities & Relationships.

20. Write a note on the following:

- a. Data Independence
- b. Relational Algebra Operations.
- c. Serializability of Schedules

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Reg. No. 

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# Raja Lakhamagouda Science Institute (Autonomous)

Belagavi

## Fifth Semester BCA Degree Examination Nov- 2014

### ESS: DATA BASE MANAGEMENT SYSTEMS

Duration: 3 hrs

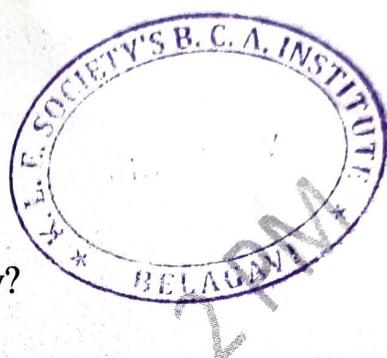
Max Marks: 70

**Instructions to candidates:**

1. Attempt all Questions.

**I. Answer any FIVE of the following questions:****2X5=10**

1. Define an attribute with example.
2. What is primary key?
3. What do you mean by redundancy?
4. What is database state?
5. What is weak entity?
6. What do you mean by functional dependency?
7. Define domain.

**II. Answer any SIX of the following :****5X6=30**

8. Define term anomalies. Explain types of anomalies.
9. Explain three-schema architecture with diagram.
10. What are ACID properties of database?
11. Explain various components of DBMS with diagram.
12. What is cardinality? Explain various type of cardinalities.
13. What is data independence? Explain its types.
14. Define data integrity. Explain entity integrity and referential integrity.
15. Explain advantages of using DBMS.

**III. Answer any THREE of the following:****3X10=30**

16. What are data models? Explain network, hierarchical & relational model with diagram.
17. What is E-R diagram? What are the symbols used in it? Create an E-R diagram for following car insurance database.  
Person (driver\_id), Name, Address  
Car (license, year, model)  
Accident (report\_no, date, location)  
Participated (damage-amount, driver\_id, license, report-no)
18. What is normalization? Explain the various normal forms.
19. Explain the two locking techniques for concurrency control.
20. What is transaction? Draw a state diagram and discuss the states that transaction goes during execution.

Reg. No. 

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## Raja Lakhamagouda Science Institute (Autonomous), Belagavi.

### Fifth Semester BCA Degree Examination Nov - 2019

#### E55: DATA BASE MANAGEMENT SYSTEM

Duration: 3 Hrs

Max Marks: 70

#### Instructions to candidates:

1. Attempt all Questions.

#### I. Answer any FIVE of the following:

 $5 \times 2 = 10$ 

1. Define Metadata.
2. List the types of database End-users.
3. Define single valued and multivalued attributes.
4. What is Domain Constraint?
5. What is anomaly in database design?
6. What is interleaved and parallel processing?
7. List reasons of transaction failure.

#### II. Answer any SIX of the following :

 $6 \times 5 = 30$ 

8. Briefly explain any five advantages of DBMS.
9. Explain Centralized Architectures of DBMS.
10. Discuss weak entity types.
11. Draw an ER diagram of a COMPANY database [consider all the necessary constraints].
12. Explain the concept of INNER JOINS in detail.
13. Explain types of Functional Dependency.
14. Explain states of transaction with diagram
15. Explain Group Functions in SQL.

#### III. Answer any THREE of the following:

 $3 \times 10 = 30$ 

16. Write note on
  - a) DBMS Interfaces.
  - b) Entity types and Entity sets
17. Explain the different types of keys in DBMS with example.
18. What is normalization? Explain 1NF, 2NF, 3NF with example.
19. a) Problems of Concurrency Control in transaction processing  
b) Explain the participation constraints of a relation.
20. a) Explain DBMS languages  
b) Write SQL Queries for below problem  

Create a EMPLOYEE, DEPARTMENT tables, INSERT tuples for each relation and write a query to display employee information who is working for the testing department [Consider necessary attributes]

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