



'समानो मन्त्रः समितिः समानी'

**UNIVERSITY OF NORTH BENGAL**  
B.Sc. Honours 4th Semester Examination, 2022

**CC10-COMPUTER SCIENCE (43)**

**DATABASE MANAGEMENT SYSTEMS**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.  
All symbols are of usual significance.*

**GROUP-A**

**Answer any *five* of the following**

1×5 = 5

1. What are the various types of keys?
2. What is a view in DBMS?
3. What is DBMS?
4. What is granularity of a data item?
5. Why do we need concurrency control?
6. What is serializability of schedule?
7. What is relational algebra?
8. What is a transaction in DBMS?

**GROUP-B**

**Answer any *three* of the following**

5×3 = 15

9. Draw an ER diagram for library management system which has student, teacher, books, inventory, and requirement. Clearly highlight entities, relationship, primary key, and foreign key.
10. Discuss validation concurrency control technique.
11. Explain why we need to recover a database with example.

12. How do we deal with constraint violation?
13. Define normalization, structural constraints, interfaces, and scheduling.

**GROUP-C**

**Answer any *two* of the following**

10×2 = 20

14. Consider the following tables:  
Part(p\_id, p\_name, p\_cost)  
Customer(c\_id, p\_id, c\_name)  
Supplier(s\_id, s\_name, p\_id, p\_city)  
Shop(sh\_id, p\_id, c\_id, s\_id, sh\_city)
  - (a) Insert into table part a new column named part details.
  - (b) List the name of customers who are from the same city.
  - (c) List the customers who have been supplied with minimum number of parts.
15. What is normalization? Why do we need to normalize our database? Explain various normal forms by taking proper examples.
16. Discuss the importance of following with respect to DBMS:
  - (a) Data independence
  - (b) Classification
  - (c) Granularity.
17. Explain Concurrency control with locking methods.

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