

Time: 2½ hrs.

Note:

Marks:75

1. All questions are compulsory with internal choice.
2. Draw neat diagrams wherever necessary.
3. Figures to the right indicate full marks.

Q.1

**Answer the following (any three)**

- (a) What is DBMS? State its applications? (15)
- (b) Explain the level of abstraction.
- (c) Explain any 5 types of relational operation with examples.
- (d) What are the advantages and disadvantages of DBMS?
- (e) State the difference between DBMS and FILE SYSTEM
- (f) Explain the database languages in DBMS?

Q.2

**Answer the following (any three)**

- (a) Explain the primary key and foreign key with the example. (15)
- (b) Explain any 2 types of architecture of DBMS.
- (c) Explain entity relationship model with its advantages and disadvantages.
- (d) Write a short note on view.
- (e) Explain the degree of relationship in the E-R diagram.
- (f) What is an attribute? What are its types?

Q.3

**Answer the following (any three)**

- (a) Explain aggregate function in detail. (15)
- (b) Write a short note on ACID property.
- (c) Explain Relational operation with examples.
- (d) Explain Group By and Order By clause with example.
- (e) Define 1) Super Key 2) Candidate Key 3) Primary Key 4) Foreign Key
- (f) Explain various set operators in detail.

Q.4

**Answer the following (any three)**

- (a) State and explain 12 Codd's rules. (15)
- (b) What is UML? Explain E-R diagram notation in UML.
- (c) Write the difference between BCNF and 3 NF.
- (d) Write the difference between Serial schedule and Serializable schedule.
- (e) Write a short note on state transactions.
- (f) Explain Normalization and it's Anomalies in detail.

Q.5

**Answer the following (any three)**

- (a) What are the possible causes of transaction failure? (15)
- (b) explain Right outer join and Left outer join in detail.
- (c) Explain the two phase locking system.
- (d) Create the following table and insert 4 records.

Emp_no	Name	city	salary
101	Rajesh	pune	15000
104	Smar	nagpur	28000
103	Swati	mumbai	15000
102	Vedant	mumbai	25000

- (e) 1) Display the employee whose salary is greater than 20000. 2) Display the employee whose city is mumbai. 3) do the round up of 85.666. 4) find the mod of (10,2)
- (f) Explain the concept of recovery in DBMS.