



Name :

Roll No. :

Invigilator's Signature :

CS/MBA (OLD)/SEM-(3 FT & 5 PT)/SM-301/2010-11

2010-11

DATABASE MANAGEMENT

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

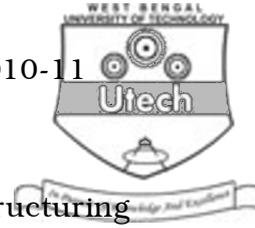
1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10

i) Which of the following is an advantage of using database system ?

- a) Security enforcement
- b) Avoidance of redundancy
- c) Reduce in consistency
- d) All of these.

ii) Relationship between entities could be of the type

- a) one to one
- b) one to many
- c) many to many
- d) all of these.



- iii) The first phase of query processing is
- a) decomposition
 - b) restructuring
 - c) analysis
 - d) none of these.
- iv) Which of the following clauses can be present in an updateable view ?
- a) Group by
 - b) Order by
 - c) Distinct
 - d) None of these.
- v) Create operation in SQL is a
- a) data query language
 - b) data definition language
 - c) data manipulation language
 - d) data control language.
- vi) Which of the following is *not* a DDL statement ?
- a) ALTER
 - b) DROP
 - c) CREATE
 - d) SELECT.
- vii) Which of the following ensures the isolation of a transaction ?
- a) Application programmer
 - b) Concurrency control
 - c) Recovery management
 - d) Transaction management.



viii) Read and Write operations of database within the same transaction must have

- a) same time stamp
- b) different time stamps
- c) no time stamp
- d) all of these.

ix) A table can have only one

- a) primary key
- b) alternative key
- c) candidate key
- d) all of these.

x) Which of the following is *not* a transaction property ?

- a) Isolation
- b) Desirability
- c) Atomicity
- d) Consistency.

xi) If all non-key attributes depend on key attribute, then the table is normalised upto

- a) BCNF
- b) 1NF
- c) 2NF
- d) 3NF.

xii) Which data model is independent of both hardware & DBMS ?

- a) External
- b) Internal
- c) Conceptual
- d) All of these.



GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. What are the different data models ? Explain.
3. What are the advantages and disadvantages of DBMS ?
4. a) Explain data dictionary. 2
b) Bring out difference among data, database and database management software. 3
5. Explain deadlock & its prevention mechanism.
6. Explain ACID properties.
7. Write syntax for the following SQL statements :
 - a) CREATE
 - b) SELECT
 - c) INSERT
 - d) UPDATE.

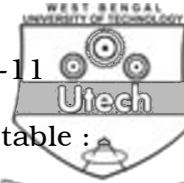


GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

8. a) Describe the three-tier architecture of DBMS. 8
- b) Discuss the disadvantages of the file based system and compare the same with DBMS. 4
- c) What is the difference between logical data independence and physical data independence ? 3
9. a) What is normalisation ? Explain the processes of normalization with the help of an example upto 3 NF. 10
- b) What is functional dependency ? 3
- c) Explain cardinality of E-R diagram. 2
10. a) Explain any *five* relational algebra operations using suitable example. 10
- b) Differentiate between DDL, DML & DCL. 5



11. Answer any *five* of the following based on the table :

Table name : Emp_rec.

Name	Dept.	Emp_id	Salary	Dt-of_join	Ref_id	Role	Address
John	IT	002	12,000	13 Feb 04	A201	Analyst	XYZ
Robert	Mkting	005	8,000	08 Jan 03	C503	Sales	ABC
Bob	HR	121	11,000	23 March 02	A245	CRM	MNO
Justin	HR	201	11,000	12 July 03	A006	Recruitment	MNO
Ji-Sung	Finance	223	10,500	11 Oct. 03	A212	ERP	XYZ-1
Henry	Mkting	301	12,000	01 March 01	C245	Sales	XYZ-2
Jack	IT	007	15,000	02 Feb. 03	A678	DBA	KLO

- a) Create the table and insert the data sets.
- b) Insert 4 sets of data only with (name, emp_id, dept and ref_id)
- c) Change the primary key (make Ref_id as Primary key)
- d) Select the name and emp_id of the employee whose ref_id is A006.
- e) Select the maximum, minimum and average salaries from emp_rec. table.
- f) Select the ref_id of the employee whose address is neither ABC nor XYZ
- g) Select the date of joining of that employee whose name is Bob.
- h) Select the employee details whose salaries are more than 11,000



12. Write short notes on any *three* of the following : 3 × 5

- a) Query optimisation
- b) Types of database triggers
- c) E-R diagram
- d) Various states of transaction
- e) Tuple, Entity, Cardinality relation
- f) Hierarchical, Network and relational Data model.

