BCA 3r^{d} Semester
Database Management System - II
C-302
Question Bank

Unit-1

1) What is database Management System? Discuss in detail the advantages and disadvantages of using a database system?
2) Discuss the main characteristics of Database approach and how it is differs from traditional file system?
3) What is data Abstraction? Why Abstraction is needed?
4) What are Instances and Schemas? Define different type of Schema?
5) How many type of Database User's? Explain each?
6) What is Data Model? Define the different type of Data models?
7) What do you mean by Database Independence?
8) Explain the distinction among the term Primary key, Candidate key and Super key?
9) Compare and Contrast the following:----
   i) Data and Information
   ii) Primary key and foreign key]
   iii) Physical and Logical data independence
10) What are the five main functions of Database Administrator?
11) What is Data Model? Define the different type of Data models?
12) Explain the Relational model proposed by B.C.codd, list the rules of Codd's for a relational database?
13) Define the Network Model? What are the advantages and disadvantages of Network Model?
14) What are the concepts of Object oriented model? Explain each?
15) Write short notes of the following:----
   i) Integrity constraints
   ii) Database Administrator
   iii) Data dictionary
   iv) Metadata
   v) Instance and Schema
   vi) Data abstraction
   vii) Relational Model

UNIT-2

1) What is Object Oriented model? What are the main features Object Oriented Database Model?
2) Explain E-R model and also defines terms Entities and Attributes?

3) Discuss Different type of user- friendly interfaces and the type of user who use each?
4) How many types of Database languages? Explain DDL and DML?
5) Explain the procedural and non procedural languages?
6) Who is DBA? What are the responsibilities of DBA?
7) What are entity and attributes? How many type of attributes use in Relational model?
8) What do you mean by mapping cardinalities? Explain each?
9) Explain the rules which are given by 'Codd ' ?
10) What are keys? How many type of keys used in Database? Explain each?
11) Describe the architecture of DBMS?
12) What do you mean by multivalued attributes?
13) What are tuples and Domain in relational model?
14) What is the difference between DBMS and RDBMS?
15) What are the advantages of Object Oriented Data Model?

UNIT-3

1) What do you mean by Functional dependency? Describe the use of Functional dependency in normalization of database?
2) What is Normalization? Describe the purpose of normalizing data?
3) How many types of Functional dependencies? Explain each with an example?
4) Describe the different Normal forms of database ?Explain the steps to normalize database up to BCNF ?
5) What is Decomposition? What is the purpose of Decomposition in database?
6) What is lossless join Decomposition? Explain with an Example?
7) Suppose that we decompose the schema R=(A,B,C,D.E)in to(A,B,C)and (A,D,E)
   Show that this decomposition is a Lossless-Join decomposition if the following set of Functional dependencies holds---
   F={ A->BC, CD->E,B->D,E->A)

8) Consider the schema R=(V,W,X,Y,Z) and suppose the following Functionaldependencies holds—
   F=(Z->V, W->Y,XY->Z,V->WX)
   State whether the following decomposition of schema R is Lossless-Join Decomposition?
9) Write short notes on the following---
   i) Functional Dependency
   ii) Decomposition
   iii) Lossless-Join decomposition
   iv) 3NF
   v) 4NF
   vi) BCNF

10) Consider a table and normalize that up to BCNF?
11) What is Multivalued functional Dependency? Explain with an example?
12) write the rules which are used in Functional dependency?

13) Let a relation R=(A,B,C,G,H,I) and set of Functional dependencies are
F=(A->B, A->C, CG->H, CG->I, B->H) holds.
Show that the following dependencies hold---
(i) A->H
(ii) CG->HI
(iii) AG->I
14) What are the Integrity Constraints? Explain each?
15) Write short notes of the following---
i) Referential integrity
ii) Entity Integrity

Unit-4

1) Define 2NF and 3NF ? Produce 3NF table structure from the table given below---

Enrl_no	S_name	Department	Year	Block_name
1024	Mathew	Phy	1	G
1126	Jhon	Che	1	G
1016	Bill	Math	2	H
1420	James	Bot	3	K
1503	charls	zoo	4	L

2) What is decomposition? What are the properties of decompositions?
3) Define the following
(i) domain
(ii) attribute
(iii) primary key
(iv) candidate key
(v) relational database
4) Explain how the GROUP BY clause works? What is the difference between GROUP BY and HAVING clause?
5) Define the following terms :
i) Tuple
ii) Domain
iii) Weak entity set
iv) Composite key
6) What are various Data types in ***SQL***?
7) Give example of following relationships :

(i) Many-to-One

(ii) One-to-One
(iii) One-to-Many
(iv) Many-to-Many

8) Give ***SQL*** statement which creates a STUDENT table consisting of following fields. and also write SQL statement for inserting the values in this table.

Name	CHAR(40)
Class	CHAR(6)
Marks	NUMBER(4)
Rank	CHAR(8)

9) Compare and contrast BCNF and 3NF ?Show that if a relational Schema is in BCNF ,Then it also in 3NF?

10) If R1 is a relation with 5 rows and R2 is a relation with 3 rows, how many rows will the Cartesian product of R1 and R2 have?

11) SQL is called as non-procedural language. Explain?
12) What do you mean by Null values? Explain with suitable examples.
13) What is the data redundancy? How to remove the data redundancy?
14) What is the Difference between Database systems and Knowledge base systems?
15) What is the difference between select and project operation? Give example.

Unit -5

1) What is Object Oriented model? what are the main features Object oriented Database model?
2) What are the advantages of Object Oriented Database System? How it is advantageous over RDBMS?
3) What is Knowledge-Based System? with the help of example explain that how it is different from a conventional database?
4) What is Client-Server model? Explain two tier and three tier structure of Client-Server model?
5) What are the main features of Client -Server model? Write the use of Client-Server model.
6) What is Client-server computing? Discuss the components of client-server model?
7) What is the need of distributed database? Discuss the structure of Distributed database management system?
8) What is Distributed database management system? what are the advantages of distributed System?
9) Explain Distributed Data Storage.
10) What is fragmentation? What is horizontal fragmentation and vertical fragmentation? Explain each with an example?
11) What is a homogeneous distributed database and heterogeneous distributed database?
12) What is data transparency? What are the various forms of data transparency?
13) Write short notes of the following----

i) Fragmentation
ii) Replication
iii) Transparency
iv) Inheritance
v) Global and Local queries

14) What are the advantages and disadvantages of distributed system over centralized system?
15) What is the system structure of Distributed Database Management system? Explain the role of transaction manager and Transaction coordinator?