

INTERNAL ASSIGNMENT 1

Course Code: OMC 201

Last Date of Submission: 18/05/2024

Course Title: Advanced Database Management System Assignment No.: 01

Note:

1. The assignment will have two parts, A and B. Part A is of 20 MCQ type questions.
2. Part B have 8 Descriptive Questions. Attempt any 5 out of it.

Part A: Multiple-Choice Questions

Q1. Database is a collection of _____ data:

- a) Non related
- b) Interrelated
- c) Valuable
- d) Valuable

Q2. According to the definition, Database Management System is a _____.

- a) Hardware
- b) Software
- c) Combination of Hardware and Software
- d) All of the above

Q3. Normally the schema of Database _____.

- a) Rarely changed
- b) Regularly changed
- c) Cannot be changed
- d) None of the above

Q4. Number of rows/tuples at any point in time, is known as the _____.

- a) Set of Attributes
- b) Degree
- c) Skeleton
- d) Instance

Q5. The three schema architecture does not include _____.

- a) Physical level
- b) Logical level
- c) User level
- d) System level

Q6. Number of attributes in a relation is known as _____ of that relation.

- a) Level
- b) Relationship
- c) Degree

d) Value

Q7. Properties of an Entity are also known as _____.

- a) Sub-entity
- b) Value
- c) Metadata
- d) Attribute

Q8. The number of participating entities in a relationship is known as _____.

- a) Relationship
- b) Relation
- c) Degree
- d) Number

Q9. Making changes in schema at one level should not affect the schema at next higher level, this is known as:

- a) Data dependence
- b) Data Independence
- c) Data Redundancy
- d) Data Modularity

Q10. One disadvantage of DBMS is that it can cause overhead costs in terms of initial investments on hardware, software and other resources, this is:

- a) True
- b) False
- c) Its not applicable to DBMS as DBMS is software
- d) None of the above

Q11. Users who use Database on daily basis using canned transactions are called as:

- a) Casual users
- b) Standalone users
- c) Naïve users
- d) Sophisticated users

Q12. Entities in ER Model can include _____ things:

- a) Physical
- b) Logical
- c) Both Physical and Logical
- d) None

Q13. Relationships are an association or mapping between _____:

- a) Two or more attributes
- b) Two or more entities
- c) An entity and an attribute
- d) An entity and more than on attributes

Q14. An entity not having any primary key of its own is known as _____:

- a) Strong entity
- b) Its not an entity

- c) Private entity
- d) Weak entity

Q15. Which one is not a relational algebra operation?

- a) Join
- b) Cartesian
- c) Plus
- d) Minus

Q16. We can combine tuples of two relations into a single tuple, using some condition, this operation is known as-

- a) Join
- b) Cartesian
- c) Plus
- d) Minus

Q17. _____ Constraint specify that within each tuple, the value of each attribute must be an atomic value from the domain.

- a) Data
- b) Domain
- c) Integrity
- d) Referential

Q18. Concept of 2nd NF is based on:

- a) Atomic attributes
- b) Transitive dependency
- c) Independent dependency
- d) Full functional dependency

Q.19 Concept of 3rd NF is based on:

- a) Atomic attributes
- b) Transitive dependency
- c) Independent dependency
- d) Full functional dependency

Q.20 To retrieve attributes from the given relation, we use _____ operation:

- a) Project
- b) Select
- c) Join
- d) Cartesian

Part B: Subjective Questions

Answer the following questions in brief:

Q1. National Insurance Company has to maintain a very large database. According to you which approach is better: Database approach or File system? Justify your answer with proper reasons and examples.

Q2. Explain the three schema architecture and the concept of Data Independence.

Q3. Create the following table and solve given queries:

Table Name: Product_Your Roll Number

P_Name (Unique)	P_ID (Primary Key)	P_Quantity	P_Price	P_Purchase_Date
Key Board	P1	200	120	22/Jul/2018
Mouse	P2	230	110	23/August/2018
Hard Disk	P3	Null	2000	22/Jun/2018
CD Drive	P4	400	1500	24/May/2018
Monitor	P5	500	4500	23/March/2018

- Find the Name of the Product whose Quantity is not known.
- Find the Name and ID of the Product whose has been purchased before 20/January/2019.
- How much money is invested by the Shopkeeper to keep all these products in his store?
- Add a new column named “Customer Name” to the table and fill corresponding data.
You can assume names of your choice.
- Change the Quantity of Hard Disk from Null to 240.

Q4. Draw an ERD for the following scenario:

In Life Saver Insurance company Employees work for Department. There are two types of Employees, Clerks and Salesperson. A Salesperson is an agent for any number of Customers. Salespeople are managed by a salesperson. A customer is managed by one salesperson. Customer may be Silver, Gold or Platinum customer. A customer may place many orders. An order can be placed by many customers. An order contains many inventory items. An inventory item may be listed in many orders. An Inventory item is assembled from many parts. A part may be assembled into many inventory items. Many employees assemble an inventory item. Many employees assemble an inventory item from many parts.

Q5. Differentiate Actors and Workers in the context of DBMS. Explain categories of actors and workers.

Q6. What Languages and Interfaces are available in DBMS? Explain some languages and interfaces.

Q7. Explain: Primary Keys, Foreign Keys, Candidate Keys and Super Keys with the help of suitable examples.

Q8. Consider the following relations and solve the following queries:

Student (Name, St_Roll_No, Semester, Course,)

Faculty (Fac_Name, Fac_ID, Fac_Subject, St_Roll_No)

Project (Project_Name, Project_ID, Fac_ID, St_Roll_No, Dept_ID)

Department (Dept_Name, Dept_ID, Fac_ID, Project_ID)

- a) Find the name of the Department having DeptID= IT20001.
- b) Find the name of Faculty who teach student having name Amit.
- c) Find the name of the faculty who is working on the Proj_ID=Project101.
- d) Find the details of faculties whose ID is either FAC100 or whose name is Mr. Aaditya.
- e) Find the subject of the faculty who teach students of Semester=3.