

Total No. of Questions : 07

B.Sc.(CS) (2013 & Onwards) (Sem.-3)
DATABASE MANAGEMENT SYSTEMS
 Subject Code : BCS-306
 M.Code : 71778

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and a student has to attempt any FOUR questions.

SECTION-A

1. Answer briefly :

- What is the difference between Data and Information?
- Explain Null Attribute along with one example.
- Define Cardinality and Degree.
- Explain Primary Key and Alternate Key.
- What is the purpose of DROP TABLE command? How is it different from DELETE command?
- Explain Referential Integrity.
- Give the definition of Functional Dependency.
- How Union operation is applied on two relations say R1 and R2?
- What is the meaning of a Transaction?
- What is Heterogeneous DDBMS?

SECTION-B

2. (a) Define Database Management System. What are the advantages of DBMS over traditional file processing system? Explain.
(b) Explain three level architecture of Database System.
3. What are data models? Compare and contrast hierarchical, network and relational data model.
4. (a) What is an ER diagram? Which symbols are used to create ER diagram? Illustrate with an example.
(b) Explain Physical and Logical Independence.
5. (a) What is normalization? What are its objectives? Explain various normal forms.
(b) What is the use of Inner join and outer join? List out the type of these joins with the notations used in Relational Algebra.
6. (a) What are the problems arising out of concurrent data access? How concurrency is managed?
(b) What are the various threats to data security? Explain how will you protect them?
7. Express in SQL queries :
Consider relation :
SALESMAN Table (SID, SNAME, LOCATION) where SID is the Primary Key.
PRODUCT Table (PID, PNAME, COLOR, WEIGHT) where PID is the Primary Key.
SALES_PRODUCT Table (SID, PID, QUANTITY) where (SID, PID) is the Primary Key and SID and PID are foreign keys to SALESMAN and PRODUCT tables respectively.
(a) Get the total quantity of product P1 sold by salesman S1.
(b) List all salesmen whose name start from 'B' and whose location ends with 'E'.
(c) List information of all products.
(d) Display the total quantity of all products sold whose color is WHITE.
(e) Get the total quantity sold by each salesman.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.