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42 (1) DBMS

2021
(Held in 2022)

DATABASE MANAGEMENT SYSTEM

Paper : 1.5

Full Marks : 70

Time : Three hours

***The figures in the margin indicate
full marks for the questions.***

1. (a) Define the following terms : $1 \times 5 = 5$
 - (i) Primary key
 - (ii) Integrity constraints
 - (iii) Relation
 - (iv) Database Management System
 - (v) Relational Model.
- (b) Differentiate between the following : $2\frac{1}{2} \times 2 = 5$
 - (i) File Management System and Database Management System.
 - (ii) Data Redundancy and Data Consistency.

Contd.

2. (a) Why do we have data independence in DBMS architecture? Explain briefly. 5
- (b) Define foreign key. Why do we need it? 5
3. (a) What are the major characteristics of database approach? Discuss. 5
- (b) What do you mean by referential integrity constraint and domain integrity constraint? Explain. 5
4. Define the following terms with proper examples : $2 \times 5 = 10$
- (a) Composite Primary Key
- (b) Entities and Attributes
- (c) Entity integrity constraints
- (d) DDL commands
- (e) Cardinality Ratios.
5. (a) What are the major responsibilities of Database administrators? 5
- (b) What do you mean by SQL? What are the major advantages of SQL? 5

6. Consider the following table and solve queries using SQL :

Student (Rollno, Name, Age, Address, Cno)

Course (C_num, Cname, duration)

Rollno & C_num are primary keys of student and course table. Cno of student table is the foreign key.

- (a) Give the name and address of students who are enrolled in course number C-1. 2
- (b) Update the name of Rollno 2 to 'Ramesh'. 2
- (c) Delete all the records of course table. 1
- (d) List the name of students who are enrolled in PGDCA course. 2
- (e) Drop table course from the database. 1
- (f) How many students are enrolled in individual course? 2

7. Write short notes on : **(any two)**

5×2=10

- (a) Logical and Physical Independence
- (b) Data Manipulation Commands
- (c) Entity Relationship Diagram.

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42 (1) DBMS 1.5

2019

DATABASE MANAGEMENT SYSTEM

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Answer **any seven** questions.

1. (a) Define database. What do you mean by database management system? What are the major advantages of DBMS? 1+2+3=6
(b) Define primary key and secondary key with example. 4
2. (a) What are the major characteristics of DBMS? 4
(b) Define entities and attributes. Explain with example. 4

Contd.

(c) Define multivalued attributes. 2

3. (a) Define entity integrity constraint. Why is it important? 4

(b) Define relational model. What do you mean by cardinality and degree of a relation? $2+(2+2)=6$

4. (a) Define SQL. What are the major data types of SQL? 5

(b) Define relationship. What do you mean by binary and ternary relationships? 5

5. (a) What is normalization? Why is it important? 5

(b) Define first normal form. Explain with the help of example. 5

6. Define the following terms :

$2 \times 5 = 10$

(a) JOIN

(b) Functional Dependency

(c) Stored and Derived Attributes

(d) Transitive Dependency

(e) BCNF (Boyce-Codd-Normal Form)

7. (a) Consider the following relational schema and solve the queries :

Student (Rollno, Name, Address, Course)

(a) Give syntax to insert data into a table. 1

(b) List the name of students who live in "Guwahati". 1

(c) List the name of those students who are from "Kolkata" and enrolled in course "BCA". 2

(d) Give syntax to change the name of Roll no 10 to Amar. 2

(b) Define DDL commands. Name some of the DDL commands. 4

8. (a) What are entity relationship diagrams ? Give the symbols used to represent the components of ER diagram. 2+4=6

(b) Give syntax for : 4

(i) Create

(ii) Delete.