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MCA-07/PGDCA-07/M.SC (IT)-07

Fundamentals of Database Management System

Master of Computer Application/P.G.Diploma in Computer Application/Master of Science in information Technology (MCA/PGDCA/MSc.IT-11/12/16/17)

Examination 2021 (Winter)

Time : 2 Hours **Max. Marks:80**

Note : This paper is of eighty (80) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

Section-A

(Long Answer-type questions)

Note: Section 'A' contains Five (05) long-answer-type questions of Twenty (20) marks each. Learners are required to answer any two (02) questions only.

(2 x 20=40)

Q.1 What is Database Management System (DBMS)? Explain the architecture and modeling techniques of Database Management System (DBMS)?

P.T.O.

Q.2 Explain Basic structure of SQL. Write down complete syntax of create, insert, delete and modification commands supported by SQL.

Q.3 What is Data Independence? What is the difference between Logical and Physical data independence?

Q.4 Describe the basic architecture of DBMS and compare the Hierarchical, Network and Relational data model with example.

Q.5 Consider the following database schema

Emp=(ename,set of (children), set of (Skills))
Children =(name, birthday)
Birthday =(day, month, year)
Skill =(type, set of (Exams))
Exams = (Year, city)

Write the following queries in SQL

a. Find the name of all employees who have a child who has birthday in march.
b. Find the name of all employees who took an examination for the skill "typing" city "Delhi".
c. List all skill types in relation Emp.

Section-B

(Short Answer-type questions)

Note: Section 'B' contains Eight (08) short-answer-type questions of Ten (10) marks each. Learners are required to answer any four (04) questions only.

(4 x 10=40)

Q.1 Explain the terms primary key, candidate key and foreign key. Give an example for each.

Q.2 Define the five basic operators of relational algebra with an example each.

Q.3 What do you mean by normalization? How many type of normalization are there? Explain.

Q.4 How ER Diagrams are useful in designing a logical database? Give a suitable example.

Q.5 What is the difference between file management system and data base management System. Explain.

P.T.O.

Q.6 What are the different operations on files? Explain Primary file organization..

Q.7 How can you write compound condition statement in SQL? Explain with help of suitable example.

Q.8 What is the difference between 'group by' and 'order by'? Explain 'order by' SQL query with example.

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