Fundamentals of database management system-216

Sem-III

Time: 3 Hours   M.M.: 75

Note : Attempt two questions from Section A and two questions from Section B. Section C is compulsory.

Section-A

Q 1. (a) Explain main characteristics of a database system. (8)

(b) Who is DBA? Discuss responsibilities performed by DBA. (7)

Q 2. (a) What do you understand by data independence? Differentiate between logical and physical data independence. (8)

(b) Compare conceptual and physical data models with examples. (7)

Q3. (a) Explain classification of DBMS. (8)

(b) Explain various keys used in Relational database model with suitable examples. (7)

Q 4. (a) Explain aggregation and generalization features of E-R modeling with examples. (8)

(b) What do you understand by an attribute of an entity? Provide examples of simple, composite, single-valued, multi-valued, and derived attributes. Also draw the symbols used for them in ER diagrams. (7)

Section-B

Q 5. What is FD? Explain the role of FD in the process of normalization. Explain various types of functional dependencies with suitable examples. (15)

Q 6. Explain in detail operations of relational algebra with examples. (15)

Q 7. a) What is a report? How you can create a report in MS-Access? Explain with suitable example. (8)

b) Discuss various options for searching a database available in MS-Access. (7)

Q 8. Explain following with examples (15)

(a) Sorting and filtering

(b) Table creation

(c) Macros

Section-C

Q 9. Short answer type questions.

   (i)   Briefly explain how forms are designed in MS ACCESS.   (2)

   (ii)   What is normalization? Discuss 1NF.   (1)

   (iii)   Compare 3NF and BCNF.   (2)

   (iv)   How integrity constraints are applied in MS ACCESS? Discuss.   (2)

   (v)   Discuss layered architecture of DBMS.   (2)

   (vi)   Write main features of Relational database.   (2)

   (vii)   Define entity set. Distinguish between strong and weak entity sets.   (2)

   (viii)   What are the problems of bad database design?   (2)