



RF-4793

M. C. A. (Sem. I) (ATKT) (External) Examination

April / May – 2010

Paper - 102 : Database Management Systems

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

नीचे दृशावेव निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. : <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Name of the Examination : <input type="text" value="M. C. A. (Sem. 1) (ATKT) (External)"/>	<input type="text" value="Student's Signature"/>
Name of the Subject : <input type="text" value="102 : Database Management Systems"/>	
Subject Code No. : <input type="text" value="4"/> <input type="text" value="7"/> <input type="text" value="9"/> <input type="text" value="3"/> Section No. (1, 2,.....): <input type="text" value="Nil"/>	

- 1 Attempt any two : 14
- (a) Define record based data model. Explain any one record based data model.
 - (b) Discuss role of Database Administrator.
 - (c) Explain various levels of data abstraction for DBMS.
- 2 Attempt any two : 14
- (a) Define Super Key, Candidate Key and Foreign Key. Give proper example and differentiate above terms.
 - (b) Discuss anomalies for bad database design giving proper example.
 - (c) Discuss various cardinality ratios with appropriate examples.
- 3 Discuss followings with appropriate example. (any four) 14
- (a) Functional Dependency
 - (b) Partial functional dependency
 - (c) View
 - (d) Closer of a set of attributes..
 - (e) Multi-valued Attributes.

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[Contd...

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- 4 Attempt any **two** : 14
- (a) Discuss security features of MS Access
 - (b) Explain 1st Normal Form
 - (c) Explain Entity-Relationship model with proper example.
- 5 (a) Consider following table and set of functional dependencies holds on the table. Employee (Employee No, Employee Name, Designation, Date of birth, Branch Code, Branch name, Branch city, salary)
Functional dependencies:-
Employee No-> Employee name, Designation, Date of birth, salary.
Branch Code-> Branch Name, Branch City
Employee No-> Branch Code, Branch Name, Branch City
- (i) Find candidate key(s) for table ... 2
 - (ii) State whether the relation is in 2NF or not? 4
Justify your answer ...
- (b) Consider following table (Underlined attributes forms the candidate key).
- Book Master (Book Code, ISBN, Title, Publication)
Book Detail (Book ID, Book Code, Purchase Date)
- (i) Write relational algebra expression for followings ... 4
 - (a) List Book ID, Title and ISBN for all books.
 - (b) List titles for all books from 'Pearson' publication.
 - (ii) Write SQL statements for followings ... 4
 - (a) List total number of books within library.
 - (b) Find Book Code for which maximum numbers of books have been purchased in the year 2009.
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