

## RF-4793

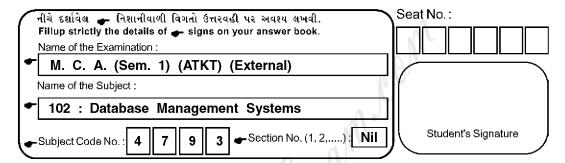
## M. C. A. (Sem. I) (ATKT) (External) Examination April/May - 2010

Paper - 102: Database Management Systems

Time: 3 Hours] [Total Marks: 70

## **Instructions:**

(1)



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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4	Atte	empt any two:	14
	(a)	Discuss security features of MS Access	
	(b)	Explain 1 <sup>st</sup> 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? Justify your answer	4
	(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
		<ul><li>(a) List Book ID, Title and ISBN for all books.</li><li>(b) List titles for all books from 'Pearson'</li></ul>	

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Write SQL statements for followings ...

List total number of books within library.

Find Book Code for which maximum numbers of books have been purchased in the year 4

publication.

2009.

(ii)

(a)