

## P.G.D.C.A. Semester – I

### DCA - 102: Database Management System

Teaching Scheme (per week)		Teaching Scheme (per semester)		Examination Scheme					
				Internal		External		Total	
Th. (Hours)	Pr. (Hours)	Total (Hours)	Credit	Th. (Marks)	Pr. (Marks)	Th. (Marks)	Pr. (Marks)	Th. (Marks)	Pr. (Marks)
4	---	40	4	30	----	70	---	100	---

<b>Unit – I</b>	<b>[17 Marks]</b>
<p><b>Database Concepts:</b> Overview of Database and DBMS, Comparison of File system and DBMS, Components of database system environment, Functions of DBMS, Advantages and disadvantages of the DBMS, Database-System Applications.</p>	
<b>Unit – II</b>	<b>[18 Marks]</b>
<p><b>Database Design and Architecture:</b> Three level Architecture of Database - external, conceptual and internal, Database Schema, Data Independence, Data Models concepts: Hierarchical, Network and Relational, DBMS users, Role of DBA.</p>	
<b>Unit – III</b>	<b>[17 Marks]</b>
<p><b>Relational Database design &amp; ER Model:</b></p> <p><b>Relational Model:</b> Concepts, Operators, relations, domains and attributes, keys, traditional set operations, special relational operations.</p> <p>Functional Dependency – definition, trivial and non-trivial FD, closure of FD set, closure of attributes, irreducible set of FD, Normalization – 1NF, 2NF, 3NF, Denormalization</p> <p><b>The E/R model</b> Entity, E-R Diagram, Attributes, Relationship &amp; Types, and Development stages of E-R diagram &amp; Examples</p>	
<b>Unit – IV</b>	<b>[18 Marks]</b>
<p><b>GUI based Database Tool:</b> Introduction of Database tools, Data types: Text, Number, Auto number, Currency, Boolean, Date/Time, Memo, Objects: Table, Query, Forms, Reports, Controls used in forms and reports</p>	

### **Reference Books:**

1. An Introduction to Database Systems By C. J. Date (8th edition) Low Price Edition
2. Database system concepts By Avi Silberschatz, Henry F. Korth, and S. Sudarshan McGraw-Hill Education
3. Microsoft Office Access 2007: The Complete Reference By Virginia Andersen McGraw Hill Professional

### **Question Paper Scheme:**

**University Examination Duration: 3 Hours.**

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|-------------------------------------------------|------------|
| Q.1 - Unit-I<br>Descriptive / Long questions.   | (12 Marks) |
| Q.2 - Unit-II<br>Descriptive / Long questions.  | (12 Marks) |
| Q.3 - Unit-III<br>Descriptive / Long questions. | (12 Marks) |
| Q.4 - Unit-IV<br>Descriptive / Long questions.  | (12 Marks) |
| Q.5 – Objective / Short Questions.              |            |
| A. Unit-I and II                                | (12 Marks) |
| B. Unit-III and IV                              | (10 Marks) |

Note: Options should be given in all questions.