

# G U I and Database Management

S.E. Sem. III [INFT]

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## EVALUATION SYSTEM

	Time	Marks
<b>Theory Exam</b>	3 Hrs	100
<b>Practical Exam</b>	–	50
<b>Oral Exam</b>	–	25
<b>Term Work</b>	–	25

## SYLLABUS

### 1. Data base concepts and Systems

Introduction – Purpose of Database Systems, Views of data, Data Models, Database language, Transaction Management, Storage Management, Database Administrator, Database Users, Overall System Structure, Different types of Database Systems.

### 2. E–R Model

Basic Concepts, Design Issues, Mapping Constraints, Keys, E–R Diagram, Weak Entity set, Extended E–R features, Design Of an E–R Database Schema, Reduction of an E–R schema to Tables.

### 3. Relational Model

Structure of Relational Database, The Relational Algebra, Views SQL–Background, Basic Structure, SET operations, Aggregate functions, Null Values, Nested Sub queries, Derived Relations, Views, Modification of Database, Joined Relations, DDL, Other SQL features.

### 4. Transaction

Transaction Concepts, State, Implementations of Atomicity and durability, Concurrent Executions, Serializability, Recoverability, Transaction Definition in SQL.

### 5. Concurrency Control

Lock based protocol, Timestamp based protocol, Validation based protocol, Deadlock Handling, Insert and Delete operations, Concurrency in index structure.

### 6. Recovery System

Failure Verification, Recovery and Atomicity, Log based recovery, shadow paging.

### 7. Graphical User Interface

Muphy's Law of GUI Design, Features of GUI, Icons and graphics, Identifying visual cues, clear communication, color selection, GUI standard, planning GUI Design work.

### 8. Visual Programming

#### Sharing data and code

Working with Projects, Introduction to Basic language, Using inbuilt controls and Active X controls, Creating and using classes, Introduction to collections, Using and creating Active X Components, dynamic data exchange, object linking and embedding.

#### Creating Visual Software entities

Working with text, graphics, working with files, file management, serial communication, multimedia control interfaces.

#### Programming for the Internet

Using Active X controls on the web–the internet transfer control for HTTP, FTP.

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**Reference :**

1. Beginning SQL Server 2000 for Visual Basic Developers – (*Willis Thearon*), Shroff Publishers & Distributors.
2. Fundamentals of Database Systems – (*Elmasri & Navathe*), Pearson Education.
3. Database Management Systems – (*Majumdar / A.K. Bhattacharyya*), Tata McGraw Hill.

