

**SCHEME OF MARKS [BA/BCOM]-CA-V SEMESTER**

<b>BA/BCOM(CA) V Semester</b>	<b>Theory</b>		<b>CCE</b>		<b>Practical</b>		<b>Total</b>
	<b>Max</b>	<b>Min</b>	<b>Max</b>	<b>Min</b>	<b>Max</b>	<b>Min</b>	
<b>Relational Database Management System &amp; Operating System Concepts</b>	<b>50</b>	<b>17</b>	<b>15</b>	<b>05</b>	<b>35</b>	<b>12</b>	<b>100</b>

**B.A./B.Com – V Semester**  
**Subject- Computer Application**

**Paper – Relational Database Management System & Operating System Concepts**

**Max Marks: 50**

**Min Marks: 17**

**UNIT-I**

**Introduction** –Functions & types of operating systems - operating system structures, system calls and system programs. **Process management** - Process concepts - process scheduling - operation on process, Inter process communication, CPU scheduling - scheduling algorithms – process synchronization- Classic Problems of synchronization - Deadlocks.

**UNIT-II**

**Memory Management** - Single and multiple partitioned allocations - paging - Segmentation - Virtual Memory Management - Demand paging and Page Replacement Algorithms. **Information Management** - File concept - Access methods - Directory structure - Allocation methods - freespace management - disk scheduling.

**UNIT-III**

**Introduction to Database:** Purpose of Database, Database System Structure **Entity Relationship Model:** Entity, Entity Set, Attributes (Simple, Composite, Single Valued, Multi Values, Null, Derived), Mapping Constraints (Mapping Cardinality), Keys (Candidate Key, Super Key, Primary Key), Entity-Relation (E-R) Diagrams. **Relational Model:** Basic Structure (Domain, Tuple, Relation).**Relational Database Design:** Pitfalls – Normalization, Functional Dependencies, First Normal Form, Second Normal Form, Third Normal, BCNF.

**UNIT-IV**

**Structured Query Language:** Oracle Data Type (Number, Char, Varchar2, Date), Operators (Arithmetic, Logical, Concatenation), **SQL Commands:** DDL (Create, Alter, Drop, Rename), DML (Insert, Update, Delete, Select), DCL (Rollback, Commit) **Constraints:** Column level, Table Level Constraints, Constraints (Unique Key, Primary Key, Check, Not Null, Foreign). Range Searching (IN, BETWEEN, NOT IN, NOT BETWEEN), Pattern Matching (Like Operator). **Single Row Function:** Number Function: (Abs, Ceil, Floor, Round, Trunc, Power, Sign, Sqrt). **Character Function:** ASCII, CHR, Concat, Initcap, Substr, Length, Lower, LPAD, RPAD, Ltrim, Rtrim, Upper

**UNIT-V**

**Date Function:** Add\_months, Last\_day, months\_between, sysdate, next\_day. **Group Function:** Group by Clause, Having Clause, Avg, Count, Max, Min, Sum. **Joins:**, Type of Join (Natural Join, Self Join) . Views. **Introduction to PL/SQL:** PL/SQL Block, PL/SQL Data Type, (Number, Char, Varchar2, Date), Comments, Serveroutput Command, Dbms\_output.put\_line Function, Conditional Control ( IF statement), Iterative Statement ( For Statement, Loop, While), Cursor, Function, Procedure, Triggers.

**Text Books:**

1. Abraham Silberschatz and P. B. Galvin - Operating system concepts - Addison Wesley Publication.
2. Data Base System Concepts - Abraham Silbershultz, Henry Korth, S. Sudershan (ISBN-0071148108)
3. Ivan Bayross, “SQL, PL/SQL”, BPB Publications”

**Reference Books:**

1. Liebschuty, “The Oracle Cook Book”, BPB Publication Michael Abbey, Michael J. Corey,
2. “Oracle A Beginners Guide”. TMH Publication Oracle Unleashed (Chapter 1,2,3,4,5 and 9)
3. Oracle Complete Reference – Oracle Press