

**PAPER 2: Introduction to Operating Systems and Database Management System**

Sl. No.	Topics	No. of Periods: 52
<b>Section A: Introduction to Operating Systems</b>		<b>Marks: 30</b>
1.	<b>Introduction to operating systems:</b> Basic OS functions, types of operating systems, concurrent processing, multiprogramming, multitasking, batch processing, time sharing.	4
2.	Introduction to Operating System Organization - Processor and user modes, kernels, system calls and system programs	6
3.	Process Management – State of the process, Different types of resources, process state, threads; Process Scheduling algorithms.	6
4.	Memory Management - Physical and virtual address space; Introduction to memory allocation strategies.	6
5.	Introduction to Concurrent processes.	4
<b>Total:</b>		26
<b>Section B: Database Systems</b>		<b>Marks: 30</b>
1	Introduction; Data abstraction; Data Independence, DBMS architecture; Database languages, data hierarchy.	6
2	Relational Model: Definition and properties, Keys; ER Diagrams.	6
3	Relational Algebra	4
4	Functional Dependency and Normalization (up to BCNF)	4
5	Query language: Introduction to SQL	4
6	Introduction to Transaction processing ACID Properties, Concurrency Control	2
<b>Total:</b>		26
<b>Books and References:</b>		
1. A Silberschatz, P.B. Galvin, G. Gagne, Operating Systems Concepts, 8th Edition, John Wiley Publications 2008.		
2. A.S. Tanenbaum, Modern Operating Systems, 3rd Edition, Pearson Education 2007.		
3. W. Stallings, Operating Systems, Internals & Design Principles , 5th Edition, Prentice Hall of India. 2008.		
4. Database System Concepts- Abraham Silberschatz, Henry Korth, S. Sudarshan McGraw-Hill.		
5. An introduction to Database Systems by, C.J.Date, Narosa Publications		
6. Fundamentals of database systems by Elmasri.Navathe, Addison Wesley		

HCSGE2022P	Practical	DBMS Laboratory	Marks: 40
HCSGE4042P			