Syllabus Topic	***Focus Level***	***Details***
System Software	Medium	Basic concepts of machine, assembly, high-level languages, compilers, interpreters, loading, linking, relocation, macros, and debuggers. Not frequently asked but fundamental knowledge is important.
Basics of Operating Systems	High	Emphasize OS structure, operations, services, system calls, OS design, implementation, and system boot. Frequently covered in exams.
Process Management	High	Focus on process scheduling, operations, interprocess communication, synchronization, critical-section problems, Peterson's solution, and semaphores. Core topic with frequent questions.
Threads	Medium	Understand multithreading models, thread libraries, implicit threading, threading issues, and multicore programming. Important but less frequently asked compared to process management.
CPU Scheduling	High	Detailed study of scheduling criteria and algorithms, thread scheduling, multiple-processor scheduling, real-time CPU scheduling. Highly emphasized in past exams.
Deadlocks	High	Deadlock characterization, handling methods, prevention, avoidance, detection, and recovery. Significant focus in exams.
Memory Management	High	Key areas include contiguous memory allocation, swapping, paging, segmentation, demand paging, page replacement, frame allocation, thrashing, memory-mapped files. Consistently asked.
Storage Management	Medium	Mass-storage structure, disk structure, scheduling, management, RAID structure. Important but fewer questions in comparison to memory management.
File and Input/Output Systems	Medium	Cover access methods, directory and disk structure, file-system mounting, sharing, implementation, directory implementation, allocation methods, free-space management, efficiency, performance, recovery, I/O hardware, application I/O interface, kernel I/O subsystem, transforming I/O requests. Less frequently asked but fundamental.
Security	Medium	Focus on protection, access matrix, access control, revocation of access rights, program and system threats, cryptography, user authentication, implementing security defenses. Essential for understanding but fewer questions in past papers.
Virtual Machines	Low	Types and implementations of virtual machines, virtualization. Not a major focus in past exams.
Linux Operating Systems	Medium	Design principles, kernel modules, process management, scheduling, memory management, file systems, input and output, interprocess communication, network structure. Important for specific questions but less frequent.
Windows	Medium	Design principles, system components, terminal services, fast user switching, file

Operating Systems		system, networking. Relevant but less frequent.
Distributed Systems	Medium	Types of network-based operating systems, network structure, communication protocols, robustness, design issues, distributed file systems. Important but fewer questions observed.