

Unit-wise Important Topics with Year-wise Question Analysis

Operating System (KCS-401)

Unit I:

- OS Types, Monolithic vs Microkernel, Functions

2023: 1 SAQ, 2022: 1 LAQ

Unit II:

- Semaphore, Critical Section, Dining Philosopher, Producer-Consumer

2023: 2 LAQ, 2022: 2 LAQ

Unit III:

- Scheduling Algorithms, Deadlock (RAG, Banker's), PCB

2023: 2 LAQ, 2022: SAQ + LAQ

Unit IV:

- Paging, TLB, Thrashing, Page Replacement

2023: 2 LAQ, 2022: 2 LAQ

Unit V:

- File System, RAID, DMA, Disk Scheduling

2023: 2 LAQ, 2022: SAQ + LAQ

Conclusion: Units III, IV, and V are most asked.

Theory of Automata and Formal Languages (KCS-402)

Unit I:

- DFA/NFA, Mealy/Moore, Minimization

2023: 2 LAQ, 2022: 2 LAQ

Unit II:

- Arden's Theorem, Pumping Lemma, Reg. Expressions

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2023: SAQ + LAQ, 2022: SAQ + LAQ

Unit III:

- CFGs, CNF/GNF, Ambiguity

2023: 1 LAQ, 2022: 2 LAQ

Unit IV:

- PDA Construction, CFG \leftrightarrow PDA, CFL Pumping Lemma

2023: 2 LAQ, 2022: 2 LAQ

Unit V:

- Turing Machines, Recursive, PCP, UTM

2023: SAQ + LAQ, 2022: 2 LAQ

Conclusion: All units appear regularly; focus more on Units I, II, and V.

Object Oriented Programming with Java (KCS-403)

Based on AKTU pattern:

Unit I: OOP Principles, Overloading, Polymorphism - Frequently Asked

Unit II: Exception Handling, Multithreading - Frequently Asked

Unit III: Java 8+ Features - Occasionally Asked

Unit IV: Collections, Comparable - Frequently Asked

Unit V: Spring Boot & REST APIs - Less Frequently Asked

Conclusion: Units I, II, and IV are commonly covered.

Python Programming (BCC-402)

Based on standard trend:

Unit-wise Important Topics with Year-wise Question Analysis

Unit I: Data Types, Operators - Basic

Unit II: Loops & Conditionals - Basic

Unit III: Functions, Lists, Tuples, Dict - Frequently Asked

Unit IV: File Handling - Medium

Unit V: Libraries (pandas, Tkinter) - Occasionally

Conclusion: Focus on Units III and IV.

Technical Communication (BAS-301)

2025 Question Paper:

Unit I: Communication Types, Flow - SAQ + LAQ

Unit II: Resume, SOP, Emails - SAQ + LAQ

Unit III: Presentation, Emotions - SAQ + LAQ

Unit IV: Feedback, Leadership - SAQ + LAQ

Unit V: Social Media, Personality Theories - SAQ + LAQ

Conclusion: All units are equally covered; questions are application-based.