

# CS405 Operating Systems – Unit 2 PYQ

## Analysis (2022–2025)

### Unit 2 Syllabus

- File Concept
- User's View & System Programmer's View of File System
- Disk Organization
- Tape Organization
- Modules of File System
- Disk Space Allocation Methods
  - Contiguous Allocation
  - Linked Allocation
  - Indexed Allocation
- Directory Structures
- File Protection
- System Calls for File Management
- Disk Scheduling Algorithm
- **PYQs Related to Unit 2**

Year	Question
June 2025	Give an example of an application in which data in a file should be accessed sequentially and randomly.
June 2025	SSTF, SCAN and LOOK Disk Scheduling Numerical
Dec 2024	Why do some systems keep track of the type of file while others do not? Which system is better?
Dec 2024	For contiguous, linked and indexed allocation, how is logical to physical address mapping accomplished?

Nov 2023	What is a File? Write different file attributes and operations.
Nov 2023	Explain disk structure. How data read and write form/on disk?
Nov 2023	Difference between SCAN and LOOK Disk Scheduling Algorithms.
June 2023	List advantages and disadvantages of Magnetic Tape Memory.
June 2023	Explain various ways of free space management.
Nov 2022	Explain file system used in Linux and Windows.
Nov 2022	What is a file? Briefly explain different directory structures used in UNIX.
June 2022	Explain File Protection with example.
June 2022	Disk request queue numerical using SCAN and LOOK.

# Topic-wise PYQ Mapping

## 1. File Concept

### PYQs

#### Nov 2023

- What is a File?
- Write different file attributes and operations.

#### June 2025

- Sequential Access vs Random Access examples.

#### Dec 2024

- File type management question.

### Frequency

★★★★ Very Important

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## 2. User's & System Programmer's View of File System

**PYQs**

**Dec 2024**

- Why do some systems keep track of file types while others do not?

**Frequency**

★★ Medium

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## 3. Disk Organization

**PYQs**

**Nov 2023**

- Explain disk structure.
- How data read/write from disk?

**Frequency**

★★★★ Important

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## 4. Tape Organization

**PYQs**

**June 2023**

- Advantages and disadvantages of Magnetic Tape Memory.

## Frequency

★★★ Important

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## 5. Different Modules of File System

### PYQs

Indirectly asked in:

- Linux File System
- Windows File System
- File Operations
- Free Space Management

## Frequency

★★ Medium

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## 6. Disk Space Allocation Methods

### Contiguous Allocation

Dec 2024

- Logical to physical address mapping.

June 2022

- Allocation method theory.

### Additional

- Contiguous Allocation advantages and disadvantages.

### Linked Allocation

**Dec 2024**

- Address mapping.

## **Indexed Allocation**

**Dec 2024**

- Address mapping.

## **Frequency**

★★★★★ MOST IMPORTANT

Appeared repeatedly in different forms.

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# **7. Directory Structures**

## **PYQs**

**Nov 2022**

- Explain different directory structures used in UNIX.

**June 2024**

- Define Directory.
- Explain any two logical directory structures.

## **Frequency**

★★★★★ High

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# **8. File Protection**

## **PYQs**

**June 2022**

- Explain File Protection with example.

## **Frequency**

★★★ Important

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## **9. System Calls for File Management**

### **PYQs**

Not directly asked as "File Management System Calls"

But covered through:

- File Operations
- Open
- Read
- Write
- Close
- Create
- Delete

Indirect questions appeared.

## **Frequency**

★★ Medium

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## **10. Disk Scheduling Algorithms**

### **PYQs**

**June 2022**

- SCAN Numerical
- LOOK Numerical

### Nov 2023

- Difference between SCAN and LOOK

### June 2025

- SSTF Numerical
- SCAN Numerical
- LOOK Numerical

### Frequency

★★★★★ MOST REPEATED NUMERICAL

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## Most Repeated Questions

### ★★★★★ Disk Scheduling

1. SCAN Algorithm Numerical
2. LOOK Algorithm Numerical
3. SSTF Algorithm Numerical
4. SCAN vs LOOK

### Appeared:

- June 2022
  - Nov 2023
  - June 2025
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### ★★★★★ File Allocation Methods

1. Contiguous Allocation

2. Linked Allocation
3. Indexed Allocation
4. Address Mapping

**Appeared:**

- Dec 2024
  - June 2022
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 **File Concept**

1. Define File
2. File Attributes
3. File Operations
4. Sequential vs Random Access

**Appeared:**

- Nov 2023
  - June 2025
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 **Directory Structure**

1. Directory Structure in UNIX
2. Logical Directory Structures

**Appeared:**

- Nov 2022
- June 2024