

SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

QUESTION BANK



V SEMESTER

PIT401 – MULTIMEDIA DATA COMPRESSION AND STORAGE

Regulation – 2023

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Prepared by

Ms.D.Revathy, Assistant Professor (O.G) / AI&DS



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SUBJECT : PIT401- MULTIMEDIA DATA COMPRESSION AND STORAGE
YEAR/SEM : III / V

UNIT I BASICS OF DATA COMPRESSION					
Introduction —Lossless and Lossy Compression– Basics of Huffmann coding- Arithmetic coding Dictionary techniques- Context based compression					
	PART – A				
Q. No	Questions	CO's	BT Level	Competence	
1	Define Data Compression?	CO1	BTL1	Remembering	
2	Explain the need for data compression.	CO1	BTL1	Understanding	
3	Differentiate between lossless and lossy compression	CO1	BTL2	Understanding	
4	What is redundancy in data compression?	CO1	BTL1	Remembering	
5	Explain the principle of lossless compression.	CO1	BTL2	Understanding	
6	Explain the principle of lossy compression.	CO1	BTL2	Understanding	
7	Why is compression important in multimedia applications?	CO1	BTL2	Understanding	
8	Define Huffman coding.	CO1	BTL1	Remembering	
9	Explain how Huffman coding achieves compression.	CO1	BTL2	Understanding	
10	Explain the concept of prefix codes in Huffman coding	CO1	BTL2	Understanding	
11	Explain the advantages of Huffman coding.	CO1	BTL2	Understanding	
12	Define Arithmetic coding.	CO1	BTL1	Remembering	
13	Explain the basic working principle of Arithmetic coding.	CO1	BTL2	Understanding	
14	Compare Huffman coding and Arithmetic coding.	CO1	BTL2	Understanding	
15	Explain the advantages of Arithmetic coding over Huffman coding.	CO1	BTL2	Understanding	
16	Define Dictionary-based compression.	CO1	BTL1	Remembering	
17	Explain the working of dictionary-based compression techniques.	CO1	BTL2	Understanding	
18	What is LZ77 compression?	CO1	BTL1	Remembering	
19	What is LZW compression?	CO1	BTL1	Remembering	
20	Define Context-based compression.	CO1	BTL1	Remembering	
21	What is meant by statistical compression?	CO1	BTL1	Remembering	
22	What is a compression ratio?	CO1	BTL1	Remembering	
23	Define Entropy in data compression?	CO1	BTL1	Remembering	
24	Explain the role of context models in context-based compression.	CO1	BTL2	Understanding	
	PART – B				
Q. No	Questions	Marks		BT Level	Competence
1	Explain the fundamentals of data compression. Compare lossless and lossy compression techniques with suitable examples, advantages, disadvantages, and applications.	16	CO1	BTL4	Analyzing
2	Discuss the different types of redundancies in data compression. Explain how redundancy reduction improves compression efficiency with suitable illustrations.	16	CO1	BTL4	Analyzing
3	Construct a Huffman coding tree for the given set of symbol frequencies and determine the corresponding Huffman codes and compression ratio.	16	CO1	BTL3	Applying
4	Explain the Huffman coding algorithm in detail.	16	CO1	BTL4	Analyzing

	Analyze its advantages, limitations, encoding process, decoding process, and practical applications.				
5	Encode a given message using the Arithmetic Coding technique and illustrate each encoding step with suitable calculations.	16	CO1	BTL3	Applying
6	Explain the working principle of Arithmetic Coding. Compare it with Huffman Coding in terms of efficiency, complexity, and applications.	16	CO1	BTL4	Analyzing
7	Analyze the Dictionary-based compression techniques. Explain the working principles of LZ77 and LZW algorithms with suitable examples.	16	CO1	BTL4	Analyzing
8	Compare Huffman Coding, Arithmetic Coding, and Dictionary-based Compression techniques based on compression ratio, complexity, memory usage, and applications.	16	CO1	BTL4	Analyzing
9	Explain the concept of Context-Based Compression. Analyze the role of context modeling in improving compression performance with suitable examples.	16	CO1	BTL4	Analyzing
10	Analyze the significance of probability models in data compression. Explain how statistical models improve compression efficiency.	16	CO1	BTL4	Analyzing
11	Explain the architecture of a general data compression system. Analyze the encoding and decoding processes with a neat block diagram.	16	CO1	BTL4	Analyzing
12	Apply the LZ77 or LZW Dictionary Compression Algorithm to compress a given input string and illustrate each step of the compression process.	16	CO1	BTL3	Applying
13	Analyze the performance of different lossless compression techniques based on compression ratio, execution time, storage efficiency, and computational complexity.	16	CO1	BTL4	Analyzing
14	Explain the advantages, disadvantages, and applications of Lossless, Lossy, Huffman, Arithmetic, Dictionary-based, and Context-based Compression techniques with suitable examples.	16	CO1	BTL4	Analyzing
15	Apply Huffman Coding to encode and decode a given set of symbols. Calculate the average code length, compression ratio, and coding efficiency.	16	CO1	BTL3	Applying
16	Analyze the challenges in designing efficient data compression algorithms. Discuss the trade-offs among compression ratio, speed, memory requirements, and implementation complexity.	16	CO1	BTL4	Analyzing
17	Explain the applications of data compression in multimedia, networking, cloud storage, and big data. Analyze the suitability of various compression techniques for different domains.	16	CO1	BTL4	Analyzing

UNIT II IMAGE COMPRESSION

Lossless Image compression – JPEG-CALIC-JPEG LS-P – Progressive Image Transmission – Lossless Image compression formats – Applications - Facsimile encoding.

PART – A

Q. No	Questions	CO's	BT Level	Competence
1	Define image compression.	CO2	BTL1	Remembering
2	What is lossless image compression?	CO2	BTL1	Remembering
3	Define JPEG	CO2	BTL1	Remembering
4	What is CALIC?	CO2	BTL1	Remembering
5	Define JPEG-LS	CO2	BTL1	Remembering

6	What is predictive coding in image compression?	CO2	BTL1	Remembering
7	Define Progressive Image Transmission.	CO2	BTL1	Remembering
8	What is meant by an image compression format?	CO2	BTL1	Remembering
9	List any two lossless image compression formats	CO2	BTL1	Remembering
10	What is facsimile (FAX) encoding?	CO2	BTL1	Remembering
11	State any two applications of image compression.	CO2	BTL1	Remembering
12	What is the objective of image compression?	CO2	BTL1	Remembering
13	Explain the difference between lossless and lossy image compression.	CO2	BTL2	Understanding
14	Explain the working principle of JPEG compression.	CO2	BTL2	Understanding
15	Explain the advantages of CALIC over conventional predictive coding techniques.	CO2	BTL2	Understanding
16	Explain the features of JPEG-LS.	CO2	BTL2	Understanding
17	Explain the need for Progressive Image Transmission.	CO2	BTL2	Understanding
18	Explain the advantages of lossless image compression	CO2	BTL2	Understanding
19	Explain the importance of lossless image compression formats.	CO2	BTL2	Understanding
20	Explain the working principle of facsimile encoding.	CO2	BTL2	Understanding
21	Explain the applications of JPEG in digital imaging.	CO2	BTL2	Understanding
22	Explain the role of prediction in lossless image compression	CO2	BTL2	Understanding
23	Explain the advantages of Progressive Image Transmission in network communication	CO2	BTL2	Understanding
24	Explain the significance of image compression in multimedia and communication systems.	CO2	BTL2	Understanding

PART – B

Q. No	Questions	Marks	CO's	BT Level	Competence
1	Explain the fundamentals of image compression. Discuss the need, objectives, advantages, and applications of image compression with suitable examples.	16	CO2	BTL3	Applying
2	Explain the architecture and working principle of lossless image compression techniques with neat diagrams and suitable examples.	16	CO2	BTL3	Applying
3	Explain the JPEG compression algorithm in detail with a neat block diagram. Illustrate each stage involved in the compression process.	16	CO2	BTL3	Applying
4	Explain the working principle of the CALIC (Context-Based Adaptive Lossless Image Coding) algorithm with suitable illustrations.	16	CO2	BTL3	Applying
5	Describe the JPEG-LS compression standard. Explain its encoding process, advantages, and applications with neat diagrams.	16	CO2	BTL3	Applying
6	Explain the concept of Progressive Image Transmission. Illustrate its working with suitable diagrams and discuss its advantages in image communication systems.	16	CO2	BTL3	Applying
7	Explain the various lossless image compression formats such as PNG, TIFF, GIF, JPEG-LS, and CALIC. Compare their features and applications.	16	CO2	BTL3	Applying
8	Explain the Facsimile (FAX) encoding technique. Describe the encoding standards and illustrate the compression process with examples.	16	CO2	BTL3	Applying

9	Explain the applications of image compression in multimedia, medical imaging, satellite imaging, remote sensing, and web applications with suitable examples.	16	CO2	BTL3	Applying
10	Compare JPEG, CALIC, and JPEG-LS in terms of compression efficiency, image quality, computational complexity, advantages, limitations, and applications.	16	CO2	BTL4	Analyzing
11	(i) Analyze the advantages and limitations of Progressive Image Transmission in image communication systems. (ii) Analyze the performance of various lossless image compression formats with respect to compression ratio, storage efficiency, and image quality.	8 8	CO2	BTL4	Analyzing
12	Analyze the role of prediction techniques in lossless image compression. Explain how prediction improves compression efficiency with suitable examples.	16	CO2	BTL4	Analyzing
13	Analyze the working principles of CALIC and JPEG-LS. Compare their prediction mechanisms, coding efficiency, advantages, and limitations.	16	CO2	BTL4	Analyzing
14	Analyze the performance of different image compression techniques based on compression ratio, image quality, processing speed, memory requirements, and application areas.	16	CO2	BTL4	Analyzing
15	(i) Analyze the applications of Facsimile Encoding in document transmission and communication systems. (ii) Compare Lossless and Lossy Image Compression techniques with suitable examples and application scenarios.	8 8	CO2	BTL4	Analyzing
16	Analyze the challenges in designing efficient lossless image compression algorithms. Discuss the trade-offs among compression ratio, computational complexity, storage efficiency, and image reconstruction quality	16	CO2	BTL4	Analyzing
17	(i) Analyze the importance of image compression in modern communication systems, cloud storage, and multimedia applications. (ii) Compare JPEG, JPEG-LS, CALIC, Progressive Image Transmission, and Facsimile Encoding based on performance, efficiency, and practical applications.	8 8	CO2	BTL4	Analyzing

UNIT III VIDEO COMPRESSION

Introduction – Motion Compensation – Video Signal Representation – H.261 – MPEG-1- MPEG-2- H.263.

PART – A

Q. No	Questions	CO's	BT Level	Competence
1	Define video compression.	CO3	BTL1	Remembering
2	What is the need for video compression?	CO3	BTL1	Remembering
3	Define motion compensation.	CO3	BTL1	Remembering
4	What is a video signal?	CO3	BTL1	Remembering
5	Define video signal representation.	CO3	BTL1	Remembering
6	What is H.261?	CO3	BTL1	Remembering
7	Define MPEG-1.	CO3	BTL1	Remembering
8	What is MPEG-2?	CO3	BTL1	Remembering
9	Define H.263.	CO3	BTL1	Remembering
10	What is an I-frame in video compression?	CO3	BTL1	Remembering
11	What is a P-frame?	CO3	BTL1	Remembering
12	What is a B-frame?	CO3	BTL1	Remembering
13	Explain the role of motion compensation in video compression.	CO3	BTL2	Understanding

14	Explain the importance of video signal representation		CO3	BTL2	Understanding
15	Explain the working principle of the H.261 video compression standard.		CO3	BTL2	Understanding
16	Explain the features of MPEG-1.		CO3	BTL2	Understanding
17	Explain the features of MPEG-2.		CO3	BTL2	Understanding
18	Explain the features of the H.263 video coding standard.		CO3	BTL2	Understanding
19	Explain the differences between I-frame, P-frame, and B-frame.		CO3	BTL2	Understanding
20	Explain the advantages of motion compensation over frame-by-frame coding.		CO3	BTL2	Understanding
21	Explain the applications of MPEG-1 and MPEG-2.		CO3	BTL2	Understanding
22	Explain the advantages of H.263 in low bit-rate video communication.		CO3	BTL2	Understanding
23	Explain the importance of video compression standards in multimedia communication.		CO3	BTL2	Understanding
24	Explain the applications of video compression in multimedia and communication systems.		CO3	BTL2	Understanding
PART – B					
1	Explain the fundamentals of video compression. Describe the need, objectives, advantages, and applications of video compression with suitable examples.	16	CO3	BTL3	Applying
2	Explain the concept of Motion Compensation. Illustrate the motion estimation and motion compensation process with neat diagrams and suitable examples.	16	CO3	BTL3	Applying
3	Explain the video signal representation process. Describe the components of a digital video signal and illustrate their role in video compression with neat diagrams.	16	CO3	BTL3	Applying
4	Explain the H.261 video coding standard in detail. Illustrate its encoder and decoder architecture with neat block diagrams and discuss its applications.	16	CO3	BTL3	Applying
5	Explain the MPEG-1 compression standard. Describe its coding process, frame structure, and applications with suitable diagrams.	16	CO3	BTL3	Applying
6	Explain the MPEG-2 video compression standard. Discuss its architecture, coding techniques, advantages, and applications with neat diagrams.	16	CO3	BTL3	Applying
7	Explain the H.263 video coding standard. Describe its coding process, features, and applications in low bit-rate video communication.	16	CO3	BTL3	Applying
8	Explain the different types of video frames (I-frame, P-frame, and B-frame) used in MPEG standards. Illustrate their coding process and significance in video compression.	16	CO3	BTL3	Applying
9	Explain the role of motion estimation and motion compensation in reducing temporal redundancy. Illustrate the complete encoding process with suitable examples.	16	CO3	BTL3	Applying
10	Compare H.261, MPEG-1, MPEG-2, and H.263 based on coding techniques, compression efficiency, bit rate, complexity, advantages, limitations, and applications	16	CO3	BTL4	Analyzing
11	Analyze the importance of Motion Compensation in video compression. Discuss its advantages, limitations, and impact on compression performance with suitable examples.	16	CO3	BTL4	Analyzing

12	Analyze the video signal representation techniques used in digital video coding. Explain their significance in achieving efficient video compression.	16	CO3	BTL4	Analyzing
13	Analyze the architecture and performance of the MPEG family of video compression standards. Compare MPEG-1 and MPEG-2 with respect to coding efficiency and application areas.	16	CO3	BTL4	Analyzing
14	Analyze the features of the H.261 and H.263 video coding standards. Compare their coding efficiency, applications, advantages, and limitations.	16	CO3	BTL4	Analyzing
15	Analyze the performance of different video compression standards based on compression ratio, video quality, computational complexity, bandwidth utilization, and practical applications.	16	CO3	BTL4	Analyzing
16	Analyze the challenges in designing efficient video compression systems. Discuss the trade-offs among compression ratio, computational complexity, storage requirements, transmission bandwidth, and video quality.	16	CO3	BTL4	Analyzing
17	Analyze the applications of video compression in multimedia streaming, video conferencing, digital television, surveillance systems, online education, and mobile communication. Discuss the suitability of various video coding standards for each application.	16	CO3	BTL4	Analyzing

UNIT IV DATA PLACEMENT ON DISKS

Statistical placement on Disks – Striping on Disks – Replication Placement on Disks Constraint allocation on Disks – Tertiary storage Devices – Continuous Placement on Hierarchical storage system – Statistical placement on Hierarchical storage systems – Constraint allocation on Hierarchical storage system.

PART – A

Q. No	Questions	CO's	BT Level	Competence
1	Define data placement on disks.	CO4	BTL1	Remembering
2	What is statistical placement on disks?	CO4	BTL1	Remembering
3	Define disk striping.	CO4	BTL1	Remembering
4	What is replication placement?	CO4	BTL1	Remembering
5	Define constraint allocation on disks.	CO4	BTL1	Remembering
6	What is a tertiary storage device?	CO4	BTL1	Remembering
7	Define a hierarchical storage system (HSS).	CO4	BTL1	Remembering
8	What is continuous placement in a hierarchical storage system?	CO4	BTL1	Remembering
9	Define statistical placement in hierarchical storage systems.	CO4	BTL1	Remembering
10	What is constraint allocation in hierarchical storage systems?	CO4	BTL1	Remembering
11	What is the purpose of disk striping?	CO4	BTL1	Remembering
12	State any two advantages of replication placement.	CO4	BTL1	Remembering
13	Explain the importance of statistical placement on disks.	CO4	BTL2	Understanding
14	Explain the working principle of disk striping.	CO4	BTL2	Understanding
15	Explain the significance of replication placement in storage systems.	CO4	BTL2	Understanding
16	Explain the need for constraint allocation on disks.	CO4	BTL2	Understanding
17	Explain the role of tertiary storage devices in data storage.	CO4	BTL2	Understanding
18	Explain the concept of continuous placement in hierarchical storage systems.	CO4	BTL2	Understanding
19	Explain the advantages of hierarchical storage systems.	CO4	BTL2	Understanding

20	Explain the role of statistical placement in hierarchical storage systems.		CO4	BTL2	Understanding
21	Explain the importance of constraint allocation in hierarchical storage systems.		CO4	BTL2	Understanding
22	Explain the advantages of disk striping in improving storage performance		CO4	BTL2	Understanding
23	Explain the applications of hierarchical storage systems in modern data centers.		CO4	BTL2	Understanding
24	Explain the importance of data placement strategies in improving storage efficiency and system performance.		CO4	BTL2	Understanding
PART – B					
1	Explain the fundamentals of data placement on disks. Discuss its objectives, advantages, challenges, and applications in modern storage systems with suitable examples.	16	CO4	BTL3	Applying
2	Explain the concept of Statistical Placement on Disks. Illustrate its working principle with suitable examples and discuss its advantages and limitations.	16	CO4	BTL3	Applying
3	Explain the Disk Striping technique. Describe different striping methods with neat diagrams and discuss their impact on storage performance.	16	CO4	BTL3	Applying
4	Explain the concept of Replication Placement on Disks. Describe the replication process, advantages, disadvantages, and practical applications with suitable examples.	16	CO4	BTL3	Applying
5	Explain the Constraint Allocation on Disks technique. Illustrate the allocation process with neat diagrams and discuss its significance in storage management.	16	CO4	BTL3	Applying
6	Explain the architecture and working principle of Tertiary Storage Devices. Discuss their characteristics, advantages, limitations, and applications.	16	CO4	BTL3	Applying
7	Explain the concept of Continuous Placement on Hierarchical Storage Systems. Illustrate its implementation and discuss its role in improving storage efficiency.	16	CO4	BTL3	Applying
8	Explain the Statistical Placement on Hierarchical Storage Systems. Describe its working principle, advantages, and practical applications with suitable examples.	16	CO4	BTL3	Applying
9	Explain the Constraint Allocation on Hierarchical Storage Systems. Illustrate the allocation process and discuss its advantages in large-scale storage environments.	16	CO4	BTL3	Applying
10	Compare Statistical Placement, Disk Striping, Replication Placement, and Constraint Allocation on Disks with respect to performance, reliability, storage utilization, complexity, and applications.	16	CO4	BTL4	Analyzing
11	Analyze the importance of Disk Striping in improving storage system performance. Discuss its advantages, limitations, and practical implementation with suitable examples.	16	CO4	BTL4	Analyzing
12	Analyze the role of Replication Placement in ensuring data availability and fault tolerance. Compare different replication strategies used in distributed storage systems.	16	CO4	BTL4	Analyzing
13	Analyze the architecture and performance of Hierarchical Storage Systems. Explain the interaction between primary, secondary, and tertiary storage with neat diagrams.	16	CO4	BTL4	Analyzing

14	Analyze the Statistical Placement and Constraint Allocation techniques used in hierarchical storage systems. Compare their performance, efficiency, and application scenarios.	16	CO4	BTL4	Analyzing
15	Analyze the performance of different data placement strategies based on storage efficiency, access time, fault tolerance, scalability, and cost.	16	CO4	BTL4	Analyzing
16	Analyze the challenges involved in designing efficient disk and hierarchical storage systems. Discuss the trade-offs among storage utilization, reliability, performance, scalability, and implementation complexity.	16	CO4	BTL4	Analyzing
17	Analyze the applications of data placement techniques in cloud storage, distributed file systems, big data platforms, enterprise storage, and data centers. Discuss the suitability of different placement strategies for each application.	16	CO4	BTL4	Analyzing

UNIT V DISK SCHEDULING METHODS

Scheduling methods for disk requests – Feasibility conditions of concurrent streams– Scheduling methods for request streams.

PART – A

Q. No	Questions	CO's	BT Level	Competence
1	Define disk scheduling.	CO5	BTL1	Remembering
2	What is a disk request?	CO5	BTL1	Remembering
3	Define disk scheduling algorithm.	CO5	BTL1	Remembering
4	What is First Come First Serve (FCFS) disk scheduling?	CO5	BTL1	Remembering
5	Define the Shortest Seek Time First (SSTF) scheduling algorithm.	CO5	BTL1	Remembering
6	What is the SCAN (Elevator) disk scheduling algorithm?	CO5	BTL1	Remembering
7	Define the C-SCAN disk scheduling algorithm.	CO5	BTL1	Remembering
8	What is LOOK disk scheduling?	CO5	BTL1	Remembering
9	Define the C-LOOK disk scheduling algorithm.	CO5	BTL1	Remembering
10	What is meant by a concurrent request stream?	CO5	BTL1	Remembering
11	Define the feasibility condition of concurrent streams.	CO5	BTL1	Remembering
12	State the objectives of disk scheduling.	CO5	BTL1	Remembering
13	Explain the importance of disk scheduling in operating systems.	CO5	BTL2	Understanding
14	Explain the working principle of the FCFS disk scheduling algorithm.	CO5	BTL2	Understanding
15	Explain the working principle of the SSTF disk scheduling algorithm.	CO5	BTL2	Understanding
16	Explain the working of the SCAN disk scheduling algorithm.	CO5	BTL2	Understanding
17	Explain the advantages of the C-SCAN scheduling algorithm.	CO5	BTL2	Understanding
18	Explain the differences between LOOK and C-LOOK scheduling algorithms.	CO5	BTL2	Understanding
19	Explain the need for concurrent request streams in disk scheduling.	CO5	BTL2	Understanding
20	Explain the significance of feasibility conditions in concurrent streams.	CO5	BTL2	Understanding
21	Explain the importance of request stream scheduling in storage systems.	CO5	BTL2	Understanding
22	Explain the advantages of efficient disk scheduling algorithms.	CO5	BTL2	Understanding
23	Explain the factors affecting the performance of disk scheduling methods.	CO5	BTL2	Understanding
24	Explain the applications of disk scheduling algorithms in modern storage systems.	CO5	BTL2	Understanding

	PART – B				
1	Explain the fundamentals of disk scheduling methods. Discuss their objectives, advantages, limitations, and applications in modern storage systems with suitable examples.	16	CO5	BTL3	Applying
2	Explain the FCFS (First Come First Serve) disk scheduling algorithm. Illustrate its working with a suitable example and calculate the total head movement.	16	CO5	BTL3	Applying
3	Explain the Shortest Seek Time First (SSTF) disk scheduling algorithm. Illustrate the scheduling process with a suitable example and calculate the total seek time.	16	CO5	BTL3	Applying
4	Explain the SCAN (Elevator) disk scheduling algorithm. Illustrate the head movement using a suitable request queue and discuss its advantages and disadvantages.	16	CO5	BTL3	Applying
5	Explain the C-SCAN disk scheduling algorithm. Illustrate its working with a suitable example and compare its performance with the SCAN algorithm.	16	CO5	BTL3	Applying
6	Explain the LOOK and C-LOOK disk scheduling algorithms with neat illustrations. Discuss their advantages over SCAN and C-SCAN algorithms	16	CO5	BTL3	Applying
7	Explain the concept of Feasibility Conditions of Concurrent Streams. Illustrate the scheduling process with suitable examples and discuss its significance.	16	CO5	BTL3	Applying
8	Explain the Scheduling Methods for Request Streams. Discuss the scheduling strategies used to improve disk performance with suitable examples.	16	CO5	BTL3	Applying
9	Solve a disk scheduling problem using FCFS, SSTF, SCAN, C-SCAN, LOOK, and C-LOOK algorithms. Compare the total head movements obtained for each algorithm.	16	CO5	BTL3	Applying
10	Compare FCFS, SSTF, SCAN, C-SCAN, LOOK, and C-LOOK disk scheduling algorithms with respect to seek time, throughput, response time, fairness, advantages, limitations, and applications.	16	CO5	BTL4	Analyzing
11	Analyze the performance of different disk scheduling algorithms in terms of seek time, head movement, throughput, response time, and system efficiency.	16	CO5	BTL4	Analyzing
12	Analyze the Feasibility Conditions of Concurrent Streams. Discuss their importance in ensuring efficient scheduling and avoiding resource conflicts.	16	CO5	BTL4	Analyzing
13	Analyze the different Scheduling Methods for Request Streams. Compare their effectiveness in handling concurrent disk requests and improving storage performance.	16	CO5	BTL4	Analyzing
14	Analyze the impact of disk scheduling methods on system performance. Discuss the trade-offs among response time, throughput, seek time, fairness, and implementation complexity.	16	CO5	BTL4	Analyzing
15	Analyze the suitability of various disk scheduling algorithms for real-time systems, database servers, cloud storage, and multimedia applications with suitable justification.	16	CO5	BTL4	Analyzing
16	Analyze the challenges involved in designing efficient disk scheduling algorithms. Discuss the trade-offs among performance, scalability, fairness, reliability, and computational complexity.	16	CO5	BTL4	Analyzing

17	Analyze the applications of disk scheduling methods in modern operating systems, cloud storage, distributed storage systems, enterprise data centers, and high-performance computing environments. Discuss the suitability of different scheduling algorithms for each application.	16	CO5	BTL4	Analyzing
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