FILE STRUCTURES (15IS62)

INTRODUCTION TO FILE STRUCTURES

SL. No.	Questions	Year/Marks	CO	BTL
1	What are file structures? Explain briefly the history of file structures design.	Jul 2011, Jun 2016 **(06)**	1	1
2	Explain the different costs of disk access. Define i)seek time ii)rotational delay iii)transfer time	Dec/Jan 2016 **(06)**	1	1
3	Explain the functions OPEN,READ and WRITE with parameters.	Dec 2014, Jun2014 Jun 2016 **(10)**	1	1
4	Briefly explain the different basic ways to organize the data on a disk.	Dec/Jan 2015 **(08)**	1	1
5	Briefly explain the organization of data on Nine-Track tapes with a neat diagram	Dec/Jan 2015 **(06)**	1	2
6	With neat sketch, explain Unix directory structure	Dec 2015 **(05)**	1	3
7	Explain sector based data organization in magnetic disk.	Jul 2011, 2015 **(06)**	1	3
8	Differentiate between constant linear velocity (CLV) and constant angular velocity (CAV)	Jul 2011 **(04)**	1	2
9	Differentiate between physical file and logical file	Dec 2015, 2014, Jul 2013 **(05)**	1	2
10	Discuss about the Fundamental File processing operations	Jul 2009 **(10)**	1	2
11	What are the major strengths and weekness of CD - ROM?	Jul 2009 **(06)**	1	2
12	What is seeking? How it is supported in 'C' streams and in C++ streams?	Jul 2008 **(06)**	1	3
13	Explain data organization on disk	Jul 2008 **(08)**	1	2
14	Problems on disk organization & tapes		1	3

FUNDAMENTAL FILE OPERATIONS

Sl. No.	Questions	Year/Marks	CO	BTL
1	What is a record? Explain different methods for organizing records of a file. Or Explain the different Record structures used in the organization of a file.	Jun 2015, Jul 2014, Jul 2011, Jul 2009 **(10)**	2	1

2	Write a pack() and unpack() methods in C++ for employee id, employee name, employee designation, employee contact number fields for variable length records.	Jan 2016 **(06)**	2	3
3	What are self-describing files? How it is supported in fixed length record structures, explain with an example.	Jan 2014 **(10)**	2	1
4	What is the advantage of using inheritance for record buffer classes? Explain	Jan 2015, Jun 2016 **(08)**	2	1
5	Write brief notes on : i) Performance of sequential search ii) Direct access.	Jul 2011 Jun 2016 **(08)**	2	1
6	Explain unix tools for sequential processing.	Jul 2009, Dec 2014 **(05)**	2	1
7	What is RRN? Explain how it supports direct access with example.	Dec 2015 **(06)**	2	1
8	What are the different ways of adding structures to files to maintain the identity of fields? Explain.	Jun 2015, Jul 2008 Jun 2016 **(06)**	2	1
9	Explain hierarchy for record buffer objects.	Jul 2008 **(06)**	2	1

REORGANIZATION OF FILES AND INDEXING

Sl. No.	Questions	Year/Marks	CO	BTL
1	Explain the operations required to maintain the index files.	Dec 2015, Jan 2014, July 2014 **(08)**	2	1
2	What is redundancy reduction? Explain how run-length-encoding helps in redundancy reduction with an example	Jan 2015, Jun 2016 **(06)**	2	1
3	Write an algorithm for searching a record from a file using i)binary search ii)sequential search	Jun 2015 **(06)**	2	1
4	Explain the limitations of binary searching and internal sorting.	July 2014 **(06)**	2	1
5	Explain how spaces can be reclaimed in files. Or How spaces can be reclaimed from deletion of records from fixed length record file and variable length record file?	July 2015, July 2011 July 2008, Jun 2016 **(10)**	2	2
6	What is an index? Explain a simple index for entry-sequenced file.	Jul 2011 **(10)**	2	1
7	Explain the advantages and disadvantages of 3 types of placement strategies.	Jul 2009 **(08)**	2	1
8	Explain the key sorting algorithm, with an example.	Dec 2015, Jul 2009 Jul 2008, **(07)**	2	1
9	Discuss the advantages and disadvantages of indices that are too large to hold in memory.	Jul 2008 **(05)**	2	

COSEQUENTIAL MATCH

Sl. No.	Questions	Year/Marks	CO	BTL
1	What is co-sequential processing and what are the assumptions and components of the model?	Jul 2011 **(10)**	3	1
2	Explain the following: i) K-way merge ii) A selection tree for merging large number of lists.	Jul 2011, Jun 2016 **(10)**	3	1
3	Explain the model for implementing the consequential processing and its applications to general ledger program.	Jul 2015, Jul 2014, Jul 2009 **(10)**	3	1
4	Describe how merging is used to sort large files on the disk.	July 2014, Jul 2009 **(04)**	3	1
5	Write a note on conceptual tool kit for external sorting.	Jul 2009 **(04)**	3	1
6	What is a heap? Explain heap sorting with code and example.	Jul 2008 **(08)**	3	1
7	Explain the different ways to improve the performance of merge sort.	Jul 2008 **(06)**	3	1
8	Suppose you have 40MB of memory available for sorting the 80,000,000 records file where each record is of 100 bytes. i) How long does it take to sort the file using merge-sort algorithm. ii) How long it takes to sortthe file using key-sort algorithm.	Jul 2008 **(06)**	3	3
9	Write a algorithm for heap sorting method for insertion. Show the construction of heap tree for the following sequence FDCGHIBEA	Jun 2016 **(06)**	3	1

MULTILEVEL INDEXING AND B-TREES

Sl. No.	Questions	Year/Marks	CO	BTL
1	Write a note on AVL Trees	Jan 2016 **(05)**	4	1
2	What are paged binary trees? Explain the problems associated with paged binary trees.	Dec 2015, Jun 2014 **(06)**	4	2
3	Give the formal definition of properties of B-Tree. Why is it called as "Bottom-up" tree.	Jan 2015, Jan 2014 Jun 2016 **(06)**	4	1
4	Mention the four properties of B* trees	Dec 2015, Jun 2016 **(04)**	4	1
5	What are the two major drawbacks with binary search to search a simple sorted index on secondary storage.	Jun 2015 **(02)**	4	2
6	Show the B-Tree of order 4 that result from loading the following sets of keys in order i) CGJXNSUOAEBHIF ii)CSDAMPIBWNGURKE	Jun 2015, Dec 2014 **(10)**	4	4

7	Explain with an example the creation of B-trees.	Jul 2011, Jun 2016 **(10)**	4	3
8	Explain the following with respect to B-Tree: i) Worst-case search depth ii) Redistribution during insertion.	Jul 2011 **(10)**	4	1
9	What is multilevel indexing? Explain the concept of B - Trees in multilevel indexing with an example.	Jul 2009 **(10)**	4	1
10	Explain deletion, Merging and redistribution of elements in B - Tre	Jan 2015, Jun 2015, Jan 2014, Jun 2014, Jul 2009 **(10)**	4	1
11	What are B-trees? Explain in detail an object oriented representatio of B-trees.	Jul 2008 **(10)**	4	1
12	What is redistribution? Explain redistribution during deletion and insertion of key in a B- tree node.	Jul 2008 **(10)**	4	1
13	Derive an expression for worst search depth in B-tree.		4	3
14	How is storage utilization improved by redistribution of keys during insertion		4	2
15	How is B* tree different from B-Tree. List the properties of B*trees.		4	1
16	Explain the virtual B-tree and how to overcome page fault.		4	1

INDEXED SEQUENTIAL FILE ACCESS AND PREFIX B+ TREES

Sl. No.	Questions	Year/Marks	CO	BTL
1	Compare B+ Tree and simple prefix B+ Trees.	Jan 2014 **(08)**	4	2
2	Explain how to load a simple prefix B+ Trees.	Jul 2014, Jun 2016 **(10)**	4	1
3	Explain simple prefix B+tree and the issues involved in maintenanc of such trees.	Jan 2016, Jan 2015 Jul2011, Jul 2008 Jun 2016 **(10)**	4	1
4	Explain the internal structure of index set blocks.	Jul 2015, Jul 2014, Jul 2011**(10)**	4	1
5	Explain with an example adding a simple index to the sequence set.	Jan 2015, Jun 2014 **(10)**	4	1
6	Explain the concept of indexed sequential access.	Jan 2014, Jul 2009 **(05)**	4	1
7	Give the structure of indexed set blocks with an example.	Jul 2009, Jul 2008 **(10)**	4	2
8	Compare and contrast the organization ofB - Trees and B+Trees.	Jul 2009 **(05)**	4	2
9	What is sequence set? Explain how it is maintained.	Jan 2016, Jul 2015,	4	1

		Jul2008 **(10)**		

HASHING

Sl. No.	Questions	Year/Marks	CO	BTL
1	What is hashing? Explain a simple hashing algorithm.	Jan 2016, Jan 2015, July 2014, Jan 2014, Jul2011 **(10)**	5	1
2	What is collision? Explain collision resolution by progressive overflow.	Jan 2016, Jan 2015, Jul 2014, Jul 2011, Jul 2009, Jun 2016 **(10)**	5	1
3	What is Hashing? Explain the different Hashing functions with an example.	Jul 2009 **(10)**	5	1
4	Discuss the issues that are involved in implementing the hashed file.	Jul 2008 **(06)**	5	3
5	Explain different methods used to avoid collision in hashing technique.	Jan 2015, Jul 2015, Jan 2014, Jul 2014, Jul 2008 **(10)**	5	3
6	Problems on hashing & overflow	Jun 2016 **(10)**	5	3

EXTENDED HASHING

Sl. No.	Questions	Year/Marks	CO	BTL
1	Explain the working of extendible hashing.	Jul 2015, Jan 2015, Jul 2014, Jul2011, Jul 2008, Jun 2016 **(10)**	5	1
2	Write short notes on: i) Dynamic hashing ii) Linear hashing	Jul 2015, Jan 2015, Jul 2014 ,Jan 2014, Jul2011, Jun 2016 **(10)**	5	1
3	Write short notes on Extendible hashing performance.	Jan 2014 **(05)**	5	1
4	Write a note on buddy-buckets.	Jan 2014 **(08)**	5	1
5	Write a short notes on: a. Extendible Hashing	Jul2009 **(05)**	5	1