CBCS SCHEME

USN

15IS62

Sixth Semester B.E. Degree Examination, Dec.2019/Jan.2020 File Structures

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- a. Define seek time, Rotational delay and Transfer time with respect to disk access. (04 Marks)
- Suppose we want to store a backup copy of a large file with one million 100 byte-records. If we want to store the file on 6250 bpi tape that has an interblock gap of 0.3 inches and each (04 Marks) data block contain one 100-byte records, how much tape is needed? (08 Marks)
- Briefly explain journey of a byte from users data are to disk.

- Discuss the different methods for organizing the records of a file (10 Marks)
 - What are different buffering strategies? Explain briefly,

(06 Marks)

- Module-2 Describe the limitations of binary searching and internal sorting. (08 Marks)
 - Explain the operations required to maintain an indexed file, in detail. (08 Marks)

- Give reasons for data compression. Explain Run-length encoding algorithm with an (08 Marks)
 - Describe the method to improve the secondary index structure. (08 Marks)

Module-3

- a. What are the hardware-based improvements that could lead to substantial decrease in time while file merging? Explain.
 - b. What is redistribution? Explain redistribution during insertion and deletion of elements in (08 Marks) B-trees.

- Apply K-way merge technique for large number of lists with an example. (08 Marks) (08 Marks)
 - Discuss paged binary tree. What are its advantages and disadvantages?

Module-4

- With neat sketch, Discuss simple prefix B+ tree and its maintenance. (08 Marks)
 - Explain the internal structure of index set blocks with suitable diagram.

(08 Marks)

- (08 Marks) Explain with an example adding a simple index to sequence set.
 - b. Defined indexed sequential access. Explain block splitting and merging due to insertion and (08 Marks) deletion in a sequence set.

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Module-5

- a. Explain the simple hashing algorithm with example.
 - Describe the process of collision resolution by progressive overflow.

(08 Marks)

(08 Marks)

OR

- 10 a. Suppose that 1000 addresses are allocated to hold 500 records in a randomly hashed file, and that each address can hold one record. Compute the following values.
 - The packing density for the file.
 - ii) The expected number of address with no records assigned to then by hash function.
 - iii) The expected number of addresses with one record assigned.
 - The expected number of overflow records, if only one record in assigned to each home address.

 (08 Marks)
 - b. Explain, how does extendible hashing works?

(08 Marks)

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