USN

10IS63

Sixth Semester B.E. Degree Examination, Aug./Sept.2020
File Structures

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

PART – A

1 a. Briefly explain the organization of data on Nine track tapes with a neat diagram. **(06 Marks)**

b. Illustrate the three distinct operations that contribute to the total cost of disk access. **(04 Marks)**

c. Suppose it is needed to store a backup of a large file with 1 million records of 100 bytes each on a 7500 bpi tape that has an internal gap of 0.1″ and with a blocking factor of 60. Calculate effective recording density (ERD). **(10 Marks)**

2 a. Explain the different ways of adding structures to a file to maintain identity of records? Explain each with an example. **(10 Marks)**

b. Write a brief note on the following :
(i) Record (ii) Field (iii) File (iv) Sequential file access (v) Random file access **(10 Marks)**

3 a. Briefly explain with example how spaces can be reclaimed dynamically in fixed length record and variable length records. **(10 Marks)**

b. Explain the different operators required to maintain an index file. **(10 Marks)**

4 a. Apply k-way merge technique for merging large number of list. Demonstrate with an example. **(10 Marks)**

b. Using co-sequential match based on a single loop, demonstrate intersection of two lists. **(10 Marks)**

PART – B

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5 a. What is a B-tree? With example explain the following operations in B-tree:
(i) Deletion (ii) Merging (iii) Redistribution **(10 Marks)**

b. Construct a B-tree for the following set of key : (Order 4). Show every step properly.
C G J X N S U O A E B H I F K L Q R T V **(10 Marks)**

6 a. What is indexed sequential access? Explain the block splitting and merging due to insertion and deletion in sequence set with example. **(10 Marks)**

b. Explain the internal structure of index set blocks. **(10 Marks)**

7 a. What is hashing? Write an hashing algorithm and explain with an example. **(10 Marks)**

b. What are the limitations of chained progressive overflow? **(05 Marks)**

c. Explain the implication of tombstone for insertion in progressive overflow technique. Also explain drawbacks of double hashing. **(05 Marks)**

8 a. Explain how extendable hashing works. **(10 Marks)**

b. Write short notes on dynamic hashing and linear hashing. **(10 Marks)**

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