



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.

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

- 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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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.