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10IS63

Sixth Semester B.E. Degree Examination, Dec.2017/Jan.2018

### File Structures

Time: 3 hrs.

Max. Marks:100

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

#### PART – A

- 1 a. Explain the seeking operation in detail with respect to C stream and also C++ stream class. (08 Marks)
- b. List and briefly explain the strength and weakness of CD-ROM. (05 Marks)
- c. Write a C++ program to read the contents of a file and display the contents in reverse order on the terminal. (07 Marks)
- 2 a. Differentiate between fixed length record and variable length record with suitable examples. (04 Marks)
- b. Explain the class hierarchy for record buffer object - IOBuffer. Also write only the class structure with main members and methods of class IOBuffer. (08 Marks)
- c. Write a C++ program to pack the 'n' number of student records in a file. (Fixed length record structure can be used) (08 Marks)
- 3 a. Write a C++ function or algorithm to search a record using RRN. (06 Marks)
- b. List the needs of data compression. Explain Run-length encoding algorithm with an example. (08 Marks)
- c. Explain the various placement strategies. (06 Marks)
- 4 a. Define co-sequential processing. Explain the essential components of consequential processing model. (10 Marks)
- b. Explain K-way merge algorithm with an example. (10 Marks)

#### PART – B

- 5 a. List the B-tree properties. Explain search and insert methods with respect to B-tree. (10 Marks)
- b. Calculate the number of levels for a B-tree given 1000000 keys and order 512. (10 Marks)
- 6 a. Explain indexed sequential access. Explain block splitting and merging in the sequence set with suitable examples. (10 Marks)
- b. Explain in detail simple prefix B<sup>+</sup> tree maintenance. (10 Marks)
- 7 a. Define hashing. Differentiate between hashing and indexing. Explain simple hashing algorithm with an example. (10 Marks)
- b. Explain double hashing and chained progressive overflow in detail (10 Marks)
- 8 Explain the following:
  - a. Tries
  - b. Unix directory structure
  - c. Field structures
  - d. Key sorting algorithm. (20 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.

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