



Sixth Semester B.E. Degree Examination, Jan./Feb. 2021

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. Discuss about the fundamental file processing operations. (09 Marks)
- b. What are the major strengths and weakness of CD-ROM? (05 Marks)
- c. Differentiate between the following :
 - i) Physical life and logical file
 - ii) Constant Liner Velocity (CLV) and Constant Angular Velocity (CAV). (06 Marks)
- 2 a. Explain the different ways of adding structures to files to maintain the identity of fields. (08 Marks)
- b. Write brief note on :
 - i) Performance of sequential search
 - ii) Direct access. (08 Marks)
- c. Discuss the importance of header records for a record file. With an example. (04 Marks)
- 3 a. Build the Huffman tree and code the input symbols for the following sequence :

Symbol	p	r	a	o	s	i	g	c
Probability	2	5	3	0.5	2	1	2.5	4

 (10 Marks)
- b. Define internal and external fragmentation. Describe the remedial measures to minimize fragmentation. (05 Marks)
- c. How indexing is done that is too large to hold in memory? (05 Marks)
- 4 a. Describe how co-sequential processing is implanted in a general ledger program. (08 Marks)
- b. Write an algorithm to build heap. Implement the heap sort algorithm on the given list :
6, 4, 3, 7, 8, 10, 2. (12 Marks)

PART - B

- 5 a. Write a C++ code for method search() in B-tree. (05 Marks)
- b. For the given sequence "Q, W, E, R, T, Y, U, I, O, P, A, S, D, F, G, H". Show how B-tree of order 4, is constructed stepwise. (10 Marks)
- c. Briefly explain Paged binary trees. (05 Marks)
- 6 a. Explain the concept of indexed sequential access. (05 Marks)
- b. Explain simple prefix B⁺ tree with example. (05 Marks)
- c. With suitable diagrams, explain the internal structure of index set block. (10 Marks)
- 7 a. What is hashing? Explain a simple hashing algorithm. (10 Marks)
- b. List the various methods used to avoid collision and discuss any two methods in detail with suitable example. (10 Marks)
- 8 a. Explain the working of extendible hashing with suitable example. (10 Marks)
- b. What are buddy buckets? Explain deletion in extendible hashing. Write the procedure for finding buddy buckets. (10 Marks)
