

7. Explain the following with examples :

- (a) Merge sort and its complexity (8)
- (b) Linear search and its advantages, disadvantages and complexity. (8)

**UNIT-IV**

8. (a) What are Collisions ? How are these harmful and resolved ? Discuss with examples. (8)
- (b) Explain direct access files, their uses and advantages. (8)
9. Explain the following with examples :
- (a) Multilist file, its uses and advantages (8)
  - (b) Hashing functions and their relative merits/demerits. (8)

Roll No. ....

**97674**

**B.C.A. 4th Semester**

**Examination-May, 2017**

**Data Structure-II**

**Paper-BCA-207**

**Time : 3 hours**

**Max. Marks : 80**

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

**Note :** Question 1 is **compulsory**. Attempt **four** more questions, selecting **one** question from each unit. All questions carry equals marks.

1. Answer the following questions briefly :  
[8×2 = 16]

- (a) Discuss the complexity of Binary search.

- (b) Write advantages of Hashing.
- (c) Describe two applications of general trees.
- (d) Discuss major features of B-trees.
- (e) Explain Variable length records.
- (f) Describe complexity of Heap sort.
- (g) Write the use and advantages of Files.
- (h) Discuss advantages of Graphs.

### UNIT-I

2. (a) What is Huffman's algorithm ? How is it useful and used ? Discuss with examples. (8)
- (b) Discuss uses and advantages of AVL search trees with suitable examples. (8)
3. Explain the following briefly with suitable examples :
  - (a) B+ trees and their advantages (8)

- (b) Role of threads in Binary search trees (8)

### UNIT-II

4. (a) What is traversal of Graphs ? How is it useful and used ? Explain with suitable examples. (8)
- (b) Discuss Topological Sorting and its advantages with suitable examples. (8)
5. Describe the following with examples :
  - (a) Various operations on Graphs (8)
  - (b) Dijkstra algorithm for shortest path (8)

### UNIT-III

6. (a) What is Quick sort? How is it used and useful ? Explain its complexity also with suitable examples. (10)
- (b) Which sorting algorithm is the best on the basis of complexity and why ? (6)