

9. Explain the following briefly with examples :

- (a) Indexed sequential file organization and its merits and demerits. 6
- (b) Inverted and multi-list organizations and their relative advantages and disadvantages. 10

Roll No. ....

**97674**

**BCA 4th Semester**

**Examination – July, 2022**

**DATA STRUCTURE-II**

**Paper : BCA-207**

**Time : Three hours ]**

**[ Maximum 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 examination.*

**Note :** Question No. 1 is compulsory. Attempt *four* more questions selecting *one* question from each Unit.

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

- (a) Define AVL tree.
- (b) Describe weighted directed graph.
- (c) Define internal and external sorting.
- (d) What is hashing ?

- (e) Discuss role of threads in a tree.
- (f) Explain complexity of linear search.
- (g) Describe variable and fixed length records.
- (h) What is merge sort ?

### UNIT - I

- 2. (a) What is B+ tree ? How is it useful and used ?  
Discuss its operations in details with examples. 10
- (b) Explain insert and delete operations in binary search tree with examples briefly. 6
- 3. Explain the following briefly with suitable examples :
  - (a) AVL tree operations and its advantages. 8
  - (b) m-way search tree operations and its uses. 8

### UNIT - II

- 4. Explain Marshall's algorithm for shortest path and its advantages and complexity with an example. 8, 4, 4

- 5. Describe the following with examples :
  - (a) Dijkstra algorithm and its uses 8
  - (b) Graph traversal techniques 8

### UNIT - III

- 6. (a) What is Radix sort ? How is it implemented ?  
Explain its advantages and complexity with examples. 8
- (b) Explain tournament sort and its complexity with an example. 8
- 7. Explain the following with examples :
  - (a) Binary search algorithm and its merits and demerits. 8
  - (b) Quick sort algorithm and its complexity. 8

### UNIT - IV

- 8. (a) Define collision. Explain its resolution techniques with their relative merits and demerits with examples. 9
- (b) Explain physical storage devices and their characteristics with suitable examples. 7