

B.Tech II Year I Semester (R15) Regular &amp; Supplementary Examinations November/December 2018

**DATA STRUCTURES**

(Electrical &amp; Electronics Engineering)

Time: 3 hours

Max. Marks: 70

**PART – A**

(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Define array with syntax.
  - (b) What is meant by asymptotic notation?
  - (c) Define queue. Write some of the applications.
  - (d) What is the need of Hash table?
  - (e) Define red black tree.
  - (f) Differentiate full binary tree with complete binary tree.
  - (g) Define sorting.
  - (h) What are the principles of sorting by selection?
  - (i) What is meant by collision resolution?
  - (j) How sequential search algorithm is analyzed?

**PART – B**

(Answer all five units, 5 X 10 = 50 Marks)

**UNIT – I**

- 2 Write a C program for adding two matrices.

**OR**

- 3 Explain the concept of circular linked list and circular doubly linked list with an example.

**UNIT – II**

- 4 Describe about the various representation of stack. Also write the procedure for evaluating an expression using stacks.

**OR**

- 5 Explain the working principles of priority queues with an example.

**UNIT – III**

- 6 Discuss about height balanced trees and their operations with an example.

**OR**

- 7 Explain the concepts of topological sorting with suitable examples.

**UNIT – IV**

- 8 Illustrate with an example about binary insertion sort.

**OR**

- 9 Give a procedure for heap sort and analyze its complexity.

**UNIT – V**

- 10 Explain in detail about binary search with an example.

**OR**

- 11 Briefly explain about the concepts of Hashing methods.

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