

Code No. 1605

**FACULTIES OF ARTS AND SCIENCE**

**B.A. / B.Sc. (Vocational) III – Year Examination, March / April 2014**

**Subject : Computer Applications**

**Paper – VII: Data Structures**

**Time : 3 hours**

**Max. Marks : 100**

**Part – A (5 x 8 = 40 Marks)**

**Note : Answer any five questions, choosing one from each unit. Each question carries 8 marks.**

**Unit - I**

1 Write notes on Array's and storage structure for arrays.

**OR**

2 Discuss about applications of queues.

**Unit - II**

3 Briefly explain about dynamic memory allocation and pointers.

**OR**

4 Define abstract data types for linked lists.

**Unit - III**

5 Write a program to implement binary search.

**OR**

6 Describe the elementary notation for analysis of algorithms.

**Unit - IV**

7 Write notes on heap trees and their construction.

**OR**

8 Define AVL tree. How it is different from binary tree?

**Unit - V**

9 Write notes on directed graphs and complete graphs.

**OR**

10 Discuss about DFS with an example.

**Part – B (5 x 12 = 60 Marks)**

**Note : Answer all questions, choosing one from each unit. Each question carries 12 marks.**

**Unit-I**

11 Explain about stacks, their operations and applications.

**OR**

12 Write a program to implement all operations on a queue using array's.

**Unit-II**

13 Write a program to implement all operations on linked stacks.

**OR**

14 Discuss about polynomial arithmetic using linked lists with examples.

**Unit-III**

15 Write a program to implement selection sort and merge sort.

**OR**

16 Write notes on various matrices and sequential sort techniques.

**Unit-IV**

17 Discuss about binary tree traversal techniques with examples and function code.

**OR**

18 Explain about AVL tree insertion and deletion operations.

**Unit-V**

19 Discuss about various representation of Graph's with diagrams.

**OR**

20 Explain about B-Tree's and insertion operation on a B-Trees.

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