(i) Printed Pages : 2 Roll No. .....

(ii) Questions : 9 Sub. Code : 1 3 4 4 2

Exam. Code : 5 0 4 3

Bachelor of Computer Application (FYUP) 3rd Semester

(2125)

DATA STRUCTURES

Paper : NBCA302

Time Allowed : Three Hours] **[Maximum Marks : 45**

Note :— (i) Question Paper consists of **nine** questions comprising **two** questions each in Sections A, B, C, D and **one** compulsory question of short answer type in Section E.

(ii) The students are required to attempt any **one** question each from Sections A, B, C, D and Section E is compulsory.

SECTION—A

1. Explain data structure with its classification and operations in detail. 9

2. (a) Define stack and its memory representation in detail. 5

   (b) Explain types of an array in detail. 4

SECTION—B

3. What is Linked list? Write an algorithm for search of a node in linked list in detail. 9

4. (a) Explain queue with its types and memory representation in detail. 5

(b) Differentiate between stack and queue in detail. 4

SECTION—C

5. (a) Describe graph and its memory representation in detail. 5

(b) Explain DFS traversing of a graph in detail. 4

6. (a) What are trees? Explain its types in detail. 5

(b) Explain binary tree In order traversal in detail. 4

SECTION—D

7. Explain Linear Search. Write an algorithm for a Linear search. 9

8. Explain sorting with its types in detail. Elaborate comparison between different sorting. 9

SECTION—E

(Compulsory)

9. Elaborate :

(a) Algorithm Complexity

(b) Recursion

(c) Push and Pop

(d) Circular linked list

(e) Weighted Graph 2+2+2+2+1