

Total No. of Questions : 8]

SEAT No. :

PE4288

[Total No. of Pages : 2

[6582]-61

S.E. (Information Technology)

DATA STRUCTURES AND ALGORITHM

(2019 Pattern) (Semester - III) (214443)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

Q1) a) Explain Representation of stack using array, structure and linked list with example. [6]

b) Write a short note on doubly ended queue with example. [6]

c) Explain sequential organization of queue. With example. [6]

OR

Q2) a) Evaluate the following postfix expression $AB + C - BA + C \$$ for $A = 1$, $B = 2$, $C = 3$. [6]

b) Convert following infix expression to postfix expression. [6]

$(a+b)*(c/d)-e$

c) Explain operations on stack with example. [6]

Q3) a) Explain representation of tree using sequential and linked organization. [6]

b) Discuss the merits & demerits of implementing threaded binary tree. [6]

c) Explain binary tree traversals with example. [5]

OR

Q4) a) Explain conversion of general tree to binary tree with example. [6]

b) Explain operations on binary search tree with example. [6]

c) Explain treaded binary tree with example. [5]

P.T.O.

- Q5)** a) Explain Representation of graph with example. [6]
b) Write short note on prim's algorithm with example. [6]
c) Write short note on kruskal's algorithm with example. [6]

OR

- Q6)** a) Write short note on Dijkstra's algorithm with example. [6]
b) Write short note on AVL tree with example. [6]
c) Write short note on Heap data structure with example. [6]

- Q7)** a) Define hash table and Explain Basic Concepts of hashing. [6]
b) Explain Linear Probing with example. [6]
c) Explain Quadratic Probing with example. [5]

OR

- Q8)** a) Explain any three operations on file with example. [6]
b) Differentiate between index sequential and direct access file. [6]
c) Explain sequential file and index sequential file organisation. [5]

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