No. of Printed Pages : 4
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30833

3th Sem. / Comp, IT, CNC

Subject : Data Structure Using C

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

Q.1 a) What is Data Structure?

b) What is the difference between constant and variable?

c) Define bottom up design.

d) What are two dimensional arrays.

e) Define algorithm?

f) Stacks are also called FIFO lists. Is it true or false?

g) Name the operations performed on data structures.

h) Explain the term overflow?

i) Define Dequeue.

Q.4 Write notes on:-

(a) Array

(b) Linked list.

Q.5 Define the Queue data structure. Write an algorithm to delete and insert an item from the queue and into the queue.

Q.6 Explain binary search technique along with its algorithm.

Q.7 Explain how you will insert an element into binary search tree.

j) What is column major order.

k) Define searching.

l) What is Insertion sort.

m) What is merge sort.

n) Define heap sort.

o) What is Pre order traversal.

p) What is polish notation.

q) What is static Memory allocation.

r) Define Indegree and outdegree of a node.

SECTION-B

Note: Short answer type questions. Attempt any ten parts 10x4=40

Q.2 i) What are the advantages of linked lists over arrays.

ii) List various operations possible on stack. Explain with example.

iii) In what ways doubly linked list is better than single linked list. Give example.

iv) Define queue? Explain working of circular queue in short.

v) Explain bubble sort with example.

vi) What is Row major and column major implementation of array.

vii) Explain structure of doubly linked list.

viii) Discuss applications of stacks?

ix) Explain structured programming in detail.

x) Explain binary search tree with suitable example.

xi) Give differences between linear and non-linear data structures.

xii) Explain various types of trees.

xiii) Write an algorithm to pop an element from stack

xiv) Discuss any two methods of traversing a binary tree.

xv) Differentiate between 1-D and 2-D arrays.

SECTION-C

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.3 What is Quick sort? Explain its working by taking suitable example.