Total No. of Questions : 5]

SEAT No. :

PA-1967

[Total No. of Pages : 2

[5954]-302
S.Y. B.B.A. (Computer Application)
CA - 302 : DATA STRUCTURE
(2019 Pattern) (Semester - III)

Time : 2½Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right side indicate full marks.***

Q1) Attempt any EIGHT of the following. **[8×2=16]**

a) How to measure performance of an algorithm?

b) What is polynomial? How is it differ from structure?

c) What is balance factor? How is it calculated?

d) What are Abstract Data types?

e) What is Ancestor of Node?

f) State the types of graph.

g) Differentiate array and structure.

h) What is space and time complexity?

i) What is pointer to pointer?

j) What is spanning tree?

Q2) Attempt any FOUR of the following. **[4×4=16]**

a) Explain Insertion sort technique with an example.

b) What is circular queue? How it is differ from static queue?

c) What is stack? What are the various applications of stack. List operations performed on stack.

d) Explain different types of AVL rotations with an example.

e) Explain various types of Dynamic Memory Allocation functions.

Q3) Attempt any FOUR of the following. **[4×4=16]**

a) Write a function to create and display doubly link list.

b) Write a recursive functions to traverse a tree by using inorder (), preorder () and postorder traversing functions.

P.T.O.

c) Write a function to delete first node from singly linked list.

d) Write a function to reverse a string using stack.

e) Write a 'C' Program for evaluation of polynomial.

Q4) Attempt any FOUR of the following. **[4×4=16]**

a) Construct an AVL tree for following sequencial data:

Jan, Feb, Apr, May, July, Aug, June.

b) Use merge sort technique on following data:

45, 85, 96, 78, 34, 12, 49, 38, 18.

c) Write a 'C' program to creat link list with given number in which data part of each node contains individual digits of the numbers.

d) What is circular queue? Explain it with example.

e) Construct Binary search tree of following data:

RAM, SITA, AMIT, JOEL, IVAN, ASHA

Q5) Attempt any TWO of the following. **[2×3=6]**

a) Define the following terms:

i) Directed graph

ii) Strict binary tree

iii) Cyclic graph

b) Convert the following expression into postfix

i) A/B $ CD * E - A *C

ii) (A + B * C -D)/ E $ F

c) What is degree of vertex? Find the indegree and outdegree of following graph of each vertex: