P1527

[6002]-156

S.E. (Computer / AI & DS)
FUNDAMENTALS OF DATA STRUCTURE
(2019 Pattern) (Semester - III) (210242)

Time : 2½ Hours]   *[Max. Marks : 70*

Instructions to the candidates:
1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
2) *Figures to the right indicate full marks.*
3) *Neat diagrams must be drawn whenever necessary.*
4) *Make suitable assumption whenever necessary.*

Q1) a) Write a pseudo code for binary search apply you algorithm on the following no.s stored in an array to search no:23 & 100. **[9]**
9,17,23,40,45,52,58,80,85,95,100

b) Explain the selection sort with algorithm sort the following no.s using selection sort & show the content of array after every pass. **[9]**
27, 76, 17, 9, 45, 58, 90, 79, 100.

OR

Q2) a) Explain quick sort algorithm with suitable example. What is time complexity of quick sort algorithm. **[9]**

b) Write a short note on sentinel search & Index sequential search with suitable example. **[9]**

Q3) a) Write a pseudo code to insert new node in to singly link list. **[9]**

b) Explain the representation of polynomial using GLL. **[9]**

OR

Q4) a) What is doubly linkedlist. Explain the process of deletion of element from doubly linked list with example. **[9]**

b) What is dynamic data structure. Explain with circular linked list with it's basic operation. **[9]**

Q5) a) Write a pseudo code for basic operation of stack. **[8]**

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b) What are the variants of recursion. Explain with example. **[9]**

OR

Q6) a) Write algorithm for posfix expression evalution. Explain with suitable example. **[8]**

b) Explain the linked implementation of stack with suitable example. **[9]**

Q7) a) Write pseudo code to implement circular queue using array. Explain it's basic operation **[9]**

b) Explain array implementation of priority queue with all basic operation. **[8]**

OR

Q8) a) Explain linked implementation of queue with suitable example. **[9]**

b) Write pseudo code for insertion operation of input restricted & output restricted double ended queue. **[8]**

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