



Data Structures & Files (1080)

P. Pages : 2

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answer sheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Figures to the right indicate full marks.
5. Answer **any two** questions from each unit.
6. Assume suitable data if necessary.

UNIT - I

1. Explain following terms with suitable example. 10
 - i) Data type
 - ii) Data object
 - iii) Data structure
 - iv) Abstract data type (ADT)
 - v) Implementation of data structure
2. Write and explain an algorithm for conversion of Infix expression to prefix expression. Also justify the same with following example. 10
 $A+B*C$.
3. Write short notes on. 10
 - i) Use of stack in recursive function call.
 - ii) Drawbacks of Linear Queue and concept of circular queue.

UNIT - II

4. Write and explain procedures for PUSH and POP functions of linked stack. Also state advantages. 10
5. Write and explain procedures for insert and delete functions of linked queue. Also state advantages. 10
6. Write and explain circular queue using linked list also give algorithm for insertion and deletion using linked list. 10

UNIT - III

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| 7. | Explain concept of representing Binary tree in memory.
i) Array Representation.
ii) Linked Representation with example. | 10 |
| 8. | Explain height balanced tree. With the help of example mention LL, LR, RL. and RR rotations clearly. | 10 |
| 9. | Write and explain non - recursive algorithm using stack for post order traversal of binary tree, Justify the same algorithm using suitable example. | 10 |

UNIT - IV

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| 10. | Explain quick sort and bubble sort algorithms with example. Also state time complexity. | 10 |
| 11. | Explain insertion sort and selection sort algorithms with example. Also state time complexity. | 10 |
| 12. | Explain various Hash functions with example. | 10 |

UNIT - V

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| 13. | Explain sequential files and relative files with example. | 10 |
| 14. | Explain direct access files along with all primitive operations performed on it. | 10 |
| 15. | Explain multilist files and Index sequential files with example. | 10 |
