



Reg. No. :

Name :

VI Semester B.A./B.Sc./B.Com./B.B.A./B.B.A. T.T.M./B.B.M./B.C.A./B.S.W./
B.A. Afsal UI Ulama Degree (CCSS – Regular) Examination, April 2012
OPEN COURSE IN MATHEMATICS
6D02 MAT : Principles of Computer Science

Time : 2 Hours

Max. Weightage : 20

PART – A

Answer all questions :

I. Fill in the blanks :

- 1. A single elementary unit of information representing an attribute of an entity is called _____
- 2. Example for a linear data structure is _____
- 3. Complexity of a linear search algorithm is _____
- 4. FIFO stands for the data structure _____ (Weightage 1)

- II. 5. Example for a static data structure is _____
- 6. The pointer of the last node in a linked list is _____
- 7. The header list where the last node contains the null pointer is called a _____
- 8. In a two way linked list, the pointer field BACK contains _____ (Weightage 1)

PART – B

Answer any six from the following : (Weightage 1 each)

- 9. Define data structure.
- 10. What do you mean by queue ?
- 11. What do you mean by binary search ?
- 12. Explain the term algorithm.



13. What is global variable ?
14. Define linked list.
15. What do you mean by overflow in a linked list ?
16. Explain header linked list.
17. Write a note on two way list.
18. What is sorting ?

(Weightage : $6 \times 1 = 6$)

PART – C

Answer **any four** from the following :

(Weightage 2 each)

19. Write a note on records.
20. Explain different data structure operations.
21. Write a note on subalgorithms.
22. Write an algorithm to find the roots of a quadratic equation.
23. Write an algorithm for traversing a linked list.
24. Write a note on garbage collection in linked list.
25. What are the advantages of two-way linked lists over one-way linked list.
26. Write an algorithm to find the number of elements in a linked list. (Weightage : $4 \times 2 = 8$)

PART – D

Answer **any one** from the following :

(Weightage 4 each)

27. Explain control structures with details.
 28. Write a note on trees. Express the algebraic expression $(2x + y)(a - 7b)^3$ as a tree.
 29. Write an algorithm which deletes the last node from a list. (Weightage : $1 \times 4 = 4$)
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