M 850

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 Ul 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 : 6×1=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× 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× 4=4)**

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