**M 3237**

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 – Reg./Supple./Improv.)
Examination, May 2013
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. The collection of a field values of a given entity is called a _____

2. Example for a nonlinear data structure is _____

3. Complexity of a binary search algorithm is _____

4. LIFO stands for the data structure _____ **(Weightage : 1)**

II. Fill in the blanks :

5. Data elements of a linked list are called _____

6. The list pointer variable which contains the address of the first node in the list
   is _____

7. The header list where the last node points back to the header node is called a
   _____

8. In a two way linked list, the pointer field FORW contains _____
   **(Weightage : 1)**

## PART – B

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

9. What do you mean by stack ?

10. Define a graph.

11. What do you mean by linear search ?

12. Explain the term subalgorithm.

13. What is local variable ?

14. What do you mean by garbage collection ?

15. What do you mean by underflow in a linked list ?

16. What is meant by complexity of an algorithm ?

17. Define free pool.

18. What is selection logic ?                                    (Weightage : 6×1=6)

## PART – C

Answer **any four** from the following. (**Weightage 2 each**) :

19. Write a note on data structures.

20. Explain arrays with example.

21. Write a note on Big 'O' notation.

22. Write an algorithm to print the prime numbers less than N.

23. Write an algorithm to insert an item as the first node in the list.

24. What are the operations possible in a two way linked list ?

25. Explain how a header linked list is used for maintaining polynomials in memory with an example.

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 one and two dimensional arrays with examples.

28. How we can represent a linked list in memory ? Explain with an example.

29. Suppose NAME1 is a list in memory. Write an algorithm which copies
NAME1 into a list NAME2.                                    (Weightage : 1×4=4)