## 2013

Time: 3 hours

Full Marks: 80

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer five questions in which Q. No. 1 is compulsory.

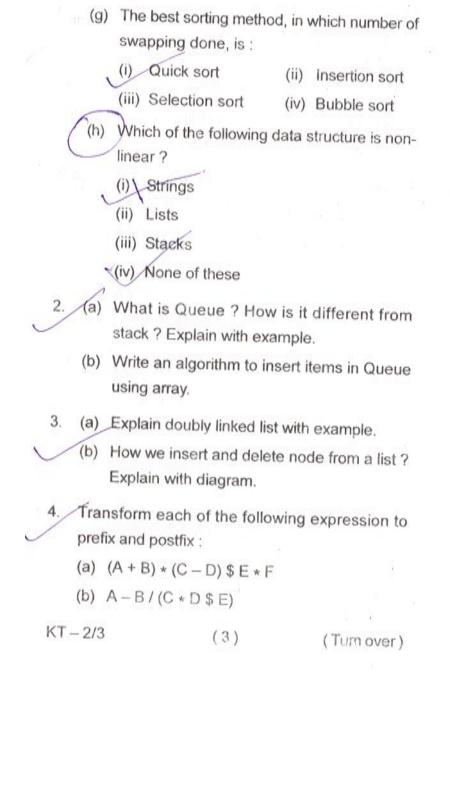
Indicate the correct answer from the following :

- (a) The complexity of linear search algorithm is :
  - (i) O(n)
- (ii) O(log n)
- (iii) O(n2)
- (iv) O(n 1)
- (b) Which of the following cases does not exist in complexity theory?
  - (i) Best cases
- (ii) Worst cases
- (iii) Average cases
- (iv) Mull cases

KT - 2/3

(Turn over)

(c) Queue is a list.
(i) LIFO (ii) LILO
(iii) FILO (iv) EIFO
(d) The operation of processing each element in
the list is known as :
(i) Sorting
(ii) Merging
(iii) Insert
(iv) Fraversing
(v) None of these
(e) A technique for direct search is:
(i) Binary search
(ii) Linear search
(iii) Hashing
(iv) Tree search
(f) Which of the following data structure is used
to implement recursion 2
(i) Array (ii) Queue
(iii) Stack (iv) Linked list
(ii) Array (ii) Queue (iii) Stack (iv) Linked list (2) Contd.



- Discuss about data structure and its type with example.
- What do you mean by sorting? Write the different types of sorting methods. Explain the procedure of bubble sort with example.
- (a) How searching is different from sorting?
   Discuss with example.
  - (b) Discuss about Dynamic Memory Management with example.
- (a) What is Hashing? Write the procedure of binary tree hashing.
  - (b) Write the different steps involved in Breadth First Search and Depth First Search.
- (a) Write the differences between binary tree and balanced tree with diagram.
  - (b) In which condition, we prefer binary search over linear search? Write algorithm for binary search.

