



C09-IT-305

3303

BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—2014

DIT—THIRD SEMESTER EXAMINATION

DATA STRUCTURES THROUGH C

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Classify data structures.
2. What are the different data types?
3. Define a priority queue.
4. Write the advantages of sparse matrix.
5. Define a queue.
6. What is a postfix expression? Give an example.
7. What are the applications of trees?
8. What is the post-order tree traversal? Give an example.

- * 9. Write how the merge sort works.
10. Write why the searching has the importance in computer science.

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain about the stack data structure.
12. Write a program for insertion and deletion operations on a queue.
13. Explain how insertions and deletions are performed on a doubly-linked list.
14. (a) Write how to reverse a singly-linked list.
(b) Write a function program for reversing of the singly-linked list.
15. Explain how to construct a tree for the given in-order and pre-order traversal output :
- In-order : D G B A H E I C F
Pre-order : A B D G C E H I F
16. Explain about linked list representative of a binary tree.

* 17. Explain bubble sort with example.

18. (a) Write about the selection sort program.

(b) Write about the method of binary search with an example.
