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Question Paper Code : 75538

5 Year M.Sc. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Third Semester

Software Engineering

XCS 233/10677 SW 303 – DATA STRUCTURES

(Common to 5 Year M.Sc. Information Technology/M.Sc. Computer Technology)

(Regulation 2003/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is an array of structures?
2. List out the operations performed on lists.
3. Define priority queue.
4. Mention the advantages of circularly lists over singly linked lists.
5. Define: in-degree and out-degree of a node.
6. Give the general and binary tree representation of $a * b + c / d$.
7. What is path matrix?
8. Define cutvertex.
9. Give the advantages of buddy system.
10. What are the primary uses of external storage devices?

PART B — (5 × 16 = 80 marks)

11. (a) Discuss on storage structure for arrays in detail. (16)

Or

- (b) (i) Explain the application of stack in polish expression. (8)
- (ii) Write the pseudo code to show the operation on stack. (8)

12. (a) Explain the operations of linear and circular queue. (16)

Or

(b) Explain the operations on singly linked list. Give example. (16)

13. (a) Explain the stack-implemented tree-structured symbol table in detail. (16)

Or

(b) (i) Discuss on the use of trees in manipulation of arithmetic expressions. (8)

(ii) How will you search for the availability of a number in a binary tree before inserting it into the tree. (8)

14. (a) Explain the depth first search traversal with simple example. (16)

Or

(b) Write a detailed note on PERT graph with example. (16)

15. (a) Write short notes on :

(i) Garbage Collection (8)

(ii) Processing of direct files. (8)

Or

(b) Explain the following :

(i) Structure of sequential files (6)

(ii) Dynamic storage management. (10)