

# MODEL QUESTION PAPER

MFCO1

## **I Semester M.TECH Examination, August 2011 DATA STRUCTURES AND OBJECT REPRESENTATION**

Time: 3 Hours

Max. Marks: 75

### **GROUP A : Answer any three questions.**

- Q.1 What is queue? Explain various operations on queue.
- Q.2 Develop a calling convention & associated procedure to push an item onto stack implemented with Linked list?
- Q.3 Explain Algorithms analysis Worst-Case and Average-Case?
- Q.4 Define worst-case and average case. Explain them.
- Q.5 Explain how dynamics memory allocation works in C.

### **GROUP B : Answer any three questions.**

- Q.6 Explain Clustering in a hash table?
- Q.7 List out various basic heap operations. Explain them in brief.
- Q.8 What is graph? What are the possible operations on graph? Explain.
- Q.9 Write store and retrieve function for a sparse matrix stored in row-major order in a one dimensional array.
- Q.10 What is stack? Explain various operations on stack.

### **GROUP C : All Questions are Compulsory.**

#### **Q.11 Fill in the blanks**

- (i) Void is \_\_\_\_\_ data type.
- (ii) A perfectly balanced tree with n nodes has height \_\_\_\_\_.
- (iii) The header is also sometimes called as \_\_\_\_\_ of the list.
- (iv) A \_\_\_\_\_ is a collection of nodes.
- (v) Stack is \_\_\_\_\_ memory.

#### **Q.12 Multiple choice question.**

- (i) Matrices with a high proportion of zero entries re called \_\_\_\_\_ matrices.  
(a) SPARSE (b) NULL (c) SPLAY (d) None of the above
- (ii) Linked lists are best suitable \_\_\_\_\_.  
(a) Dynamic data storage (b) Compile time data storage  
(c) For both of above situation (d) For none of above situation
- (iii) Dynamic memory allocated during \_\_\_\_\_.  
(a) Compilation (b) Execution

- (c) Loading (d) Program writing
- (iv) Which of the following can not be passed to a function?  
(a) Reference variable (b) Arrays  
(c) Class objects (d) Header files
- (v) Graph is used for \_\_\_\_\_.  
(a) Shortest path (b) Close Circuit  
(c) Both (d) None of these

**Q.13 True or false**

- (i) A pointer is location of some item  
(ii) Tree is a GRAPH  
(iii) Link list is a table.  
(iv) Stack works on FIFO principle.  
(v) Queue is a first-in-first-out.

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