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THIRD SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION NOVEMBER 2012

IT/CS 09 303/PT/CS 09 302—DATA STRUCTURES

(2009 Admissions)

Time : Three Hours Maximum : 70 Mark

Part A

Answer **all** *questions.*
Each question carries 2 *marks.*

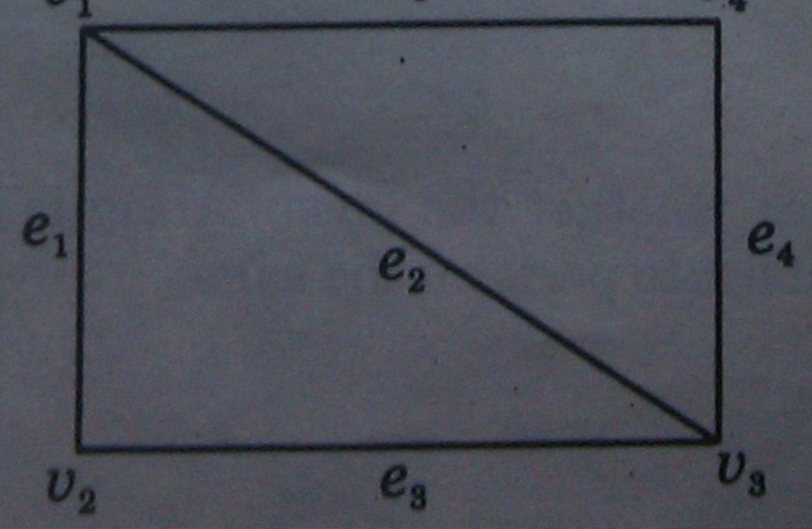
1. What is a Data Structure ? Mention any *four* primitive data structures.
2. What is a Stack ADT ? List four applications of the same.
3. What do you mean by a priority queue ?
4. Mention *two* applications of threaded binary trees.
5. Why do we go for double hashing ?

(5 × 2 = 10 marks

Part B

Answer any **four** *questions.*
Each question carries 5 *marks.*

1. Write a recursive program to compile height of a binary tree.
2. Draw a binary search tree that results from inserting into an initial empty tree records with key given below in order ? E,A,S,Y,Q,U,E,S,T,I,O,N, and then deleting 'Q'.
3. Write a short note on Garbage Collection and Compaction.
4. Design an algorithm to delete a node from a doubly linked list. Derive the time complexity of th same.
5. What is incidence matrix ? Find the incidence matrix of the following graph :–



6. Discuss the concept of open hashing and closed hashing techniques with suitable examples.

(4 × 5 = 20 marks

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