

5E3256-Q

Roll No. : \_\_\_\_\_

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B. Tech. (V Sem.) (Main/Back) Examination, December - 2011  
Computer Science  
5CS6.1 Advanced Data Structure  
Common for Computer & IT

Time : 3 Hours]

[Maximum Marks : 80

[Min. Passing Marks : 24

**Instructions to Candidates :**

*Attempt any five questions selecting one question from each unit. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Use of following supporting material is permitted during examination.  
(Mentioned in form No. 205)

1. NIL

2. NIL

**UNIT - I**

1 (a) State the condition under which insertion of a vertex in a Red-Black tree will result in a sequence of recolouring steps that terminate with the root changing colour.

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(b) Will the root of Red-Black tree always be black after performing a deletion operation ? Justify with an example.

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**OR**

1 (a) Construct a 2-3 tree for the list 9, 5, 8, 3, 2, 4 and 7 by successive insertion.

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(b) Define Dictionary and Dictionary with duplicates. List the operation performed on dictionary.

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