

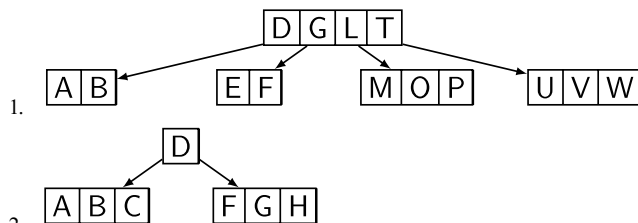
1. Which of the following statements is true for a B-tree of order m containing n items?

- (i) The height of the B-tree is $O(\log_m n)$ and this bounds the total number of disk seeks in a search for a key.
- (ii) A node contains a maximum of $m - 1$ keys, and this bounds the number of disk seeks at each level of the tree in a search for a key.
- (iii) An order 2 B-tree is also a Binary Search Tree.

Make one of the following choices.

- A. Only item (ii) is true.
- B. Correct Answer Your Answer Two of the other choices are true.
- C. All choices (i), (ii), and (iii) are true.
- D. Only item (iii) is true.
- E. Only item (i) is true.

2. Which of these two trees are valid B-Trees of order 4?



- A. Only (1) is valid.
- B. Both (1) and (2) are valid.
- C. Neither (1) nor (2) is valid.
- D. Correct Answer Your Answer Only (2) is valid.

3. What is the maximum number of keys that can be stored in a B-Tree of order 16 and height 6?

- A. $15 \times (6^{16} - 1)$
- B. $15 \times (16^6 - 1)$
- C. Your Answer None of the other options are correct
- D. $6 \times 2^{16} - 1$
- E. Correct Answer $16^7 - 1$

4. What is the minimum number of keys that can be stored in a B-Tree of order 64 and height 5?

- A. Correct Answer Your Answer $2^{26} - 1$
- B. $2^{30} - 1$
- C. $2^{30} + 1$
- D. $2^{25} - 1$
- E. $2^{25} + 1$