**Tree MCQs**

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In full binary search tree every internal node has exactly two children. If  there are 100 leaf nodes in the tree, how many internal nodes are there in  the tree? |
| ((OPTION\_A)) | 25 |
| ((OPTION\_B)) | 49 |
| ((OPTION\_C)) | 99 |
| ((OPTION\_D)) | 100 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If a node having two children is to be deleted from binary search tree, it is  replaced by its |
| ((OPTION\_A)) | In-order predecessor |
| ((OPTION\_B)) | In-order successor |
| ((OPTION\_C)) | Pre-order predecessor |
| ((OPTION\_D)) | None |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

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| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | A binary search tree is formed from the sequence 6, 9, 1, 2, 7, 14, 12, 3, 8,  18. The minimum number of nodes required to be added in to this tree to  form an extended binary tree is? |
| ((OPTION\_A)) | 3 |
| ((OPTION\_B)) | 6 |
| ((OPTION\_C)) | 8 |
| ((OPTION\_D)) | 11 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

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| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Run time for traversing all the nodes of a binary search tree with n nodes  and printing them in an order is |
| ((OPTION\_A)) | O(nlg(n)) |
| ((OPTION\_B)) | O(n) |
| ((OPTION\_C)) | O(√n) |
| ((OPTION\_D)) | O(log(n)) |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In Binary trees nodes with no successor are called ...... |
| ((OPTION\_A)) | End nodes |
| ((OPTION\_B)) | Terminal nodes |
| ((OPTION\_C)) | Final nodes |
| ((OPTION\_D)) | Last nodes |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If node N is a terminal node in a binary tree then its ......... |
| ((OPTION\_A)) | Right tree is empty |
| ((OPTION\_B)) | Left tree is empty |
| ((OPTION\_C)) | Both left & right sub trees are empty |
| ((OPTION\_D)) | Root node is empty |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Which of the following ways below is a pre order traversal? |
| ((OPTION\_A)) | Root->left sub tree->right sub tree |
| ((OPTION\_B)) | Root-> right sub tree ->left sub tree |
| ((OPTION\_C)) | right sub tree->left sub tree-> Root |
| ((OPTION\_D)) | left sub tree->Root sub tree->Root |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Which of the following ways below is a pre order traversal? |
| ((OPTION\_A)) | Root->left sub tree->right sub tree |
| ((OPTION\_B)) | Root-> right sub tree ->left sub tree |
| ((OPTION\_C)) | right sub tree->left sub tree-> Root |
| ((OPTION\_D)) | left sub tree ->Root->Right sub tree |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Which of the following statements hold true for binary trees? |
| ((OPTION\_A)) | The left subtree of a node contains only nodes with keys less than the node’s key |
| ((OPTION\_B)) | The right subtree of a node contains only one nodes with key greater than the node’s key. |
| ((OPTION\_C)) | Both a and b above |
| ((OPTION\_D)) | Noth left and right subtree nodes contains only nodes with keys less than the node’s key |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

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| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Which of the following ways below is a postorder traversal? |
| ((OPTION\_A)) | Root->left sub tree->right sub tree |
| ((OPTION\_B)) | Root-> right sub tree ->left sub tree |
| ((OPTION\_C)) | left sub tree-> right sub tree->Root |
| ((OPTION\_D)) | left sub tree ->Root->Right sub tree |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

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| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | A binary tree can be converted in to its mirror image by traversing it in |
| ((OPTION\_A)) | Inorder |
| ((OPTION\_B)) | Preorder |
| ((OPTION\_C)) | Postorder |
| ((OPTION\_D)) | Anyorder |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The in order traversal of tree will yield a sorted listing of elements of tree in |
| ((OPTION\_A)) | Binary trees |
| ((OPTION\_B)) | Binary search trees |
| ((OPTION\_C)) | Heaps |
| ((OPTION\_D)) | None of above |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | 14  / \  2 16  / \  1 5  /  4  Suppose we remove the root, replacing it with something from the left tree. What will be the new root? |
| ((OPTION\_A)) | 1 |
| ((OPTION\_B)) | 2 |
| ((OPTION\_C)) | 4 |
| ((OPTION\_D)) | 16 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The inorder traversal of following tree will give a sorted listing of  elements in the tree\_\_\_\_\_\_\_\_\_\_. |
| ((OPTION\_A)) | Binary tree |
| ((OPTION\_B)) | Binary search tree |
| ((OPTION\_C)) | AVL tree |
| ((OPTION\_D)) | Expression tree |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The time complexity of searching an element from a binary search tree  is\_\_\_\_\_. |
| ((OPTION\_A)) | O(n) |
| ((OPTION\_B)) | O(n²) |
| ((OPTION\_C)) | O(n log n) |
| ((OPTION\_D)) | O(log n) |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | One can make exact replica of binary search tree by traversing it  in\_\_\_\_\_\_\_\_. |
| ((OPTION\_A)) | inorder |
| ((OPTION\_B)) | preorder |
| ((OPTION\_C)) | Postorder |
| ((OPTION\_D)) | Any order |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Preorder traversal is nothing but\_\_\_\_\_\_\_\_\_\_\_. |
| ((OPTION\_A)) | Depth first search |
| ((OPTION\_B)) | Breadth first search |
| ((OPTION\_C)) | Linear order |
| ((OPTION\_D)) | Topological order |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Maximum number of nodes at each level i are\_\_\_\_\_\_\_\_\_. |
| ((OPTION\_A)) | 2 |
| ((OPTION\_B)) | 3 |
| ((OPTION\_C)) | I+1 |
| ((OPTION\_D)) | 2i+1 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Let T be a binary search tree with 14 nodes and 60 as external path length.  Then The internal path length is\_\_\_\_\_\_\_\_\_. |
| ((OPTION\_A)) | 50 |
| ((OPTION\_B)) | 11 |
| ((OPTION\_C)) | 32 |
| ((OPTION\_D)) | 28 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

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| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Let T Be binary search tree with 10 nodes and 30 as internal path  length. Then the external path length is\_\_\_\_\_\_. |
| ((OPTION\_A)) | 50 |
| ((OPTION\_B)) | 11 |
| ((OPTION\_C)) | 32 |
| ((OPTION\_D)) | 28 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

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| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Consider the following tree. |
| ((OPTION\_A)) | 10 |
| ((OPTION\_B)) | 11 |
| ((OPTION\_C)) | 12 |
| ((OPTION\_D)) | 14 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The average number of comparisons required for a successful search in a  binary search tree with n nodes is\_\_\_\_\_\_. |
| ((OPTION\_A)) | (I+n/n) |
| ((OPTION\_B)) | (I+2n) |
| ((OPTION\_C)) | I/n |
| ((OPTION\_D)) | E/(I+n)² |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The average number of comparisons required for unsuccessful search in a  binary search tree with n nodes is\_\_\_\_\_\_. |
| ((OPTION\_A)) | (E+n/n) |
| ((OPTION\_B)) | (E+2n) |
| ((OPTION\_C)) | E/n |
| ((OPTION\_D)) | E/(n+1) |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

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| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Construct a BST for the elements 5,3,7,2,4,8. The average number of  comparisons required for a successful search in binary search tree with  these nodes is\_\_\_\_\_. |
| ((OPTION\_A)) | 20 |
| ((OPTION\_B)) | 1.33 |
| ((OPTION\_C)) | 2.33 |
| ((OPTION\_D)) | 32.66 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

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| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Which of the following is correct?  (I)If each node contains a parent field then it is not necessary to use either  Stack Or thread.  (II)Traversal using parent pointer is more efficient than the traversal  threaded tree.  (III)A in-threaded binary tree is defined as binary tree that is left in  threaded and right in threaded. |
| ((OPTION\_A)) | I and II |
| ((OPTION\_B)) | I and III |
| ((OPTION\_C)) | II and III |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

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| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | A binary search tree is created by inserting following integers -50 ,14 ,65  ,5,20,57,91,3,8,37,60,25 The number of nodes in left and right subtree are\_\_\_\_. |
| ((OPTION\_A)) | (7,4) |
| ((OPTION\_B)) | (4,7) |
| ((OPTION\_C)) | (3,6) |
| ((OPTION\_D)) | (6,3) |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

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| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If the post order traversal gives the expression ab+gde-/\* then label of the  Nodes 1,2,3..... will be\_\_\_\_\_\_\_\_\_\_. |
| ((OPTION\_A)) | \*,+,/,a,,b,g,-,d,e |
| ((OPTION\_B)) | A,b,g,d,e,\*,+,/.- |
| ((OPTION\_C)) | A,+,b,\*,g,/,d,-,e |
| ((OPTION\_D)) | \*,+,a,b,/,g,-,d,e |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The number of null branches in a binary tree with 20 nodes is\_\_\_\_\_. |
| ((OPTION\_A)) | 18 |
| ((OPTION\_B)) | 19 |
| ((OPTION\_C)) | 20 |
| ((OPTION\_D)) | 21 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

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| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Suppose the numbers 7,5,1,8,3,6,0,9,4,2 are inserted in that order into an  Initially empty binary search tree. The binary search tree uses the usual  Ordering On natural numbers. What isthe in-order traversal sequence of the resultant  Tree? |
| ((OPTION\_A)) | 0 2 4 3 1 6 5 9 8 7 |
| ((OPTION\_B)) | 0 1 2 3 4 5 6 7 8 9 |
| ((OPTION\_C)) | 7 5 1 0 3 2 4 6 8 9 |
| ((OPTION\_D)) | 9 8 6 4 2 3 0 1 5 7 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | What would be the depth of a tree whose level is 7 ? |
| ((OPTION\_A)) | 8 |
| ((OPTION\_B)) | 4 |
| ((OPTION\_C)) | 9 |
| ((OPTION\_D)) | 7 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | How many nodes a complete binary tree of level 5 have ? |
| ((OPTION\_A)) | 15 |
| ((OPTION\_B)) | 16 |
| ((OPTION\_C)) | 31 |
| ((OPTION\_D)) | 32 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If a node in binary search tree has two children, then its inorder  Predecessor has\_\_\_\_\_. |
| ((OPTION\_A)) | No left child |
| ((OPTION\_B)) | No right child |
| ((OPTION\_C)) | Two children |
| ((OPTION\_D)) | No child |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If a node in binary search tree has two children, then its inorder  successor has\_\_\_\_\_. |
| ((OPTION\_A)) | No left child |
| ((OPTION\_B)) | No right child |
| ((OPTION\_C)) | Two children |
| ((OPTION\_D)) | No child |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In order to order to get the information stored in a binary search tree in  The descending order, one should recursively traverse it in the  Following order\_\_\_\_\_. |
| ((OPTION\_A)) | root , right sub tree ,left sub tree |
| ((OPTION\_B)) | right sub tree , root left sub tree |
| ((OPTION\_C)) | right sub tree , left sub tree, root |
| ((OPTION\_D)) | root , left sub tree , right sub tree |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Breadth first search\_\_\_\_\_. |
| ((OPTION\_A)) | Scans each incident node along with the child nodes |
| ((OPTION\_B)) | Scans all the nodes in preorder manner |
| ((OPTION\_C)) | Scans all the nodes in random manner |
| ((OPTION\_D)) | Scans all the incident edges before moving other nodes |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Consider the following code.    It reurns --- |
| ((OPTION\_A)) | Total number of nodes |
| ((OPTION\_B)) | Total number of leaf nodes |
| ((OPTION\_C)) | Total number of internal nodes |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | A binary search tree stores value in the range 50 to 550. Consider the owing sequence of keys:   1. 78 540 100 440 290 280 310 2. 50 99 120 198 245 381 480 3. 145 250 510 390 350 270 307 4. 550 150 507 398 463 402 270   Which of the following statement is true |
| ((OPTION\_A)) | 1,2 and 4 are inorder sequence of three different BST |
| ((OPTION\_B)) | 1 is preorder sequence of some BST with 440 as root |
| ((OPTION\_C)) | 2 is an inorder sequence of some BST where 120 is the root and 50 is leaf. |
| ((OPTION\_D)) | 4 is postorder sequence of some BST with 150 as root. |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- | --- |
| ((MARKS)) (1/2/3...) | 1 | |
| ((QUESTION)) | A binary search is created using the integers 10,8,13,11,12. If we want to  represent this thee using the sequential representation then node 11 will be at location.  At location. | |
| ((OPTION\_A)) | 6 | |
| ((OPTION\_B)) | 5 | |
| ((OPTION\_C)) | 4 | |
| ((OPTION\_D)) | 3 | |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A | |
| ((EXPLANATION)) (OPTIONAL) |  | |
| ((MARKS)) (1/2/3...) | | 1 |
| ((QUESTION)) | | In which order the following numbers 12,3,2,4,6,7,5,1 should be inserted in an empty binary searcg  An empty binary search tree of height 5. |
| ((OPTION\_A)) | | 1,2,3,5,12,6,7,4 |
| ((OPTION\_B)) | | 1,2,3,6,5,7,12,4 |
| ((OPTION\_C)) | | 1,2,3,4,6,7,12,5 |
| ((OPTION\_D)) | | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | | B |
| ((EXPLANATION)) (OPTIONAL) | |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In tree creation which is the most suitable data structure? |
| ((OPTION\_A)) | Arrays |
| ((OPTION\_B)) | Stack |
| ((OPTION\_C)) | Queue |
| ((OPTION\_D)) | Link list |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Construct BST for 10,08,15,12,13,07,09,17,20,18,04,05 what will be the parent  Node of node 17? |
| ((OPTION\_A)) | 9 |
| ((OPTION\_B)) | 20 |
| ((OPTION\_C)) | 10 |
| ((OPTION\_D)) | 15 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The number of nodes in null binary tree are |
| ((OPTION\_A)) | 1 |
| ((OPTION\_B)) | 2 |
| ((OPTION\_C)) | 0 |
| ((OPTION\_D)) | Null tree is invalid tree |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The preorder sequence of BST is 30,22,17,27,24,38,34,48. What is the postorder  Sequence of the same tree? |
| ((OPTION\_A)) | 17,22,24,27,30,34,38,48 |
| ((OPTION\_B)) | 30,22,38,17,27,34,48,24 |
| ((OPTION\_C)) | 17,22,27,24,34,48,38,30 |
| ((OPTION\_D)) | 17,24,27,22,34,48,38,30 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The preorder sequence of BST is 30,22,17,27,24,38,34,48. What is the  Order Sequence of the same tree? |
| ((OPTION\_A)) | 17,22,24,27,30,34,38,48 |
| ((OPTION\_B)) | 30,22,38,17,27,34,48,24 |
| ((OPTION\_C)) | 17,22,27,24,34,48,38,30 |
| ((OPTION\_D)) | 17,24,27,22,34,48,38,30 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The level order traversal of rooted tree can be done by starting from root  And Performing.------------- |
| ((OPTION\_A)) | Preorder |
| ((OPTION\_B)) | Inorder |
| ((OPTION\_C)) | DFS |
| ((OPTION\_D)) | BFS |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | When preorder and postorder sequence generates the same output then the  tree T must have------------------ |
| ((OPTION\_A)) | 3 Nodes |
| ((OPTION\_B)) | 2 Nodes |
| ((OPTION\_C)) | 1 Nodes |
| ((OPTION\_D)) | Any no. Of Nodes |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In which order the numbers 7,5,1,8,3,2 should be inserted into an empty  BST to get inorder and preorder sequence as same. |
| ((OPTION\_A)) | 3,2,1,8,7,5 |
| ((OPTION\_B)) | 8,7,5,3,2,1 |
| ((OPTION\_C)) | 1,2,3,5,7,8 |
| ((OPTION\_D)) | 3,2,8,7,5,1 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The postorder sequence of BST is as given. I,L,K,M,Y,Z,W what will be  preorder sequence. |
| ((OPTION\_A)) | I,K,L,M,W,Y,Z |
| ((OPTION\_B)) | W,M,K,I,L,Z,Y |
| ((OPTION\_C)) | W,M,Z,K,I,L,Y |
| ((OPTION\_D)) | W,M,K,L,I,Z,Y |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The following numbers are inserted into an empty BST in given order  10,2,3,5,15,12,18 what is the height of BST? |
| ((OPTION\_A)) | 2 |
| ((OPTION\_B)) | 3 |
| ((OPTION\_C)) | 4 |
| ((OPTION\_D)) | 6 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If this tree is used for sorting, then new no 8 should be placed as the  tree |
| ((OPTION\_A)) | left child of the node labelled 30. |
| ((OPTION\_B)) | right child of the node labelled 5 |
| ((OPTION\_C)) | right child of the node labelled 30 |
| ((OPTION\_D)) | left child of the node labelled 10 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If this tree is used for sorting, then new no 35 should be placed as the  tree |
| ((OPTION\_A)) | left child of the node labelled 30. |
| ((OPTION\_B)) | right child of the node labelled 5 |
| ((OPTION\_C)) | right child of the node labelled 30 |
| ((OPTION\_D)) | left child of the node labelled 10 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | **It is necessary for Huffman encoding tree to be,** |
| ((OPTION\_A)) | AVL tree |
| ((OPTION\_B)) | **Binary tree** |
| ((OPTION\_C)) | Complete binary Tree |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In the array representation of binary tree the Right child of root node will  be at the locations? |
| ((OPTION\_A)) | 0 |
| ((OPTION\_B)) | 1 |
| ((OPTION\_C)) | 2 |
| ((OPTION\_D)) | 3 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | A binary tree is a tree in which? |
| ((OPTION\_A)) | No node can have more than two children |
| ((OPTION\_B)) | Every node must have two children |
| ((OPTION\_C)) | A node can have at least two children |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | binary tree in which if all its levels except possibly the last, have the maximum number of nodes and all the nodes at the last level appear as far left as possible, is known as |
| ((OPTION\_A)) | Full binary tree |
| ((OPTION\_B)) | AVL |
| ((OPTION\_C)) | Threaded binary tree |
| ((OPTION\_D)) | Complete binary tree |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

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| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Consider the binary\_tree\_node t. Which expression indicates that t represents an empty tree? |
| ((OPTION\_A)) | (t == NULL) |
| ((OPTION\_B)) | (t->data( ) == 0) |
| ((OPTION\_C)) | (t->data( ) == NULL) |
| ((OPTION\_D)) | ((t->left( ) == NULL) && (t->right( ) == NULL)) |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In a binary tree, certain null entries are replaced by special pointers which point to nodes higher in the tree for efficiency. These special pointers are called |
| ((OPTION\_A)) | Leaf |
| ((OPTION\_B)) | branch |
| ((OPTION\_C)) | Path |
| ((OPTION\_D)) | Thread |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Select the one true statement. |
| ((OPTION\_A)) | Every binary tree is either complete or full. |
| ((OPTION\_B)) | Every complete binary tree is also a full binary tree. |
| ((OPTION\_C)) | Every full binary tree is also a complete binary tree. |
| ((OPTION\_D)) | No binary tree is both complete and full. |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Select the one FALSE statement about binary trees? |
| ((OPTION\_A)) | Every binary tree has at least one node. |
| ((OPTION\_B)) | Every non-empty tree has exactly one root node. |
| ((OPTION\_C)) | Every node has at most two children. |
| ((OPTION\_D)) | Every non-root node has exactly one parent. |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | A binary tree of depth d is an almost complete binary tree if? |
| ((OPTION\_A)) | Each leaf in the tree is either at level d or at level d-1 |
| ((OPTION\_B)) | For any node n in the tree with a right descendant at level d all the left descendants of n that are leaves, are also at level d |
| ((OPTION\_C)) | Both (A) & (B) |
| ((OPTION\_D)) | None of the Above |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | A full binary tree with 2n+1 nodes contain? |
| ((OPTION\_A)) | n leaf nodes |
| ((OPTION\_B)) | n non-leaf nodes |
| ((OPTION\_C)) | n-1 leaf nodes |
| ((OPTION\_D)) | n-1 non-leaf nodes |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The most appropriate matching for the following pairs?  X: depth first search 1: heap  Y: breadth-first search 2: queue  Z: sorting 3: stack |
| ((OPTION\_A)) | X—1 Y—2 Z-3 |
| ((OPTION\_B)) | X—3 Y—1 Z-2 |
| ((OPTION\_C)) | X—3 Y—2 Z-1 |
| ((OPTION\_D)) | X—2 Y—3 Z-1 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The difference between the external path length and the internal path length of a binary tree with n internal nodes is? |
| ((OPTION\_A)) | 1 |
| ((OPTION\_B)) | N |
| ((OPTION\_C)) | n + 1 |
| ((OPTION\_D)) | 2n |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | A threaded binary tree is a binary tree in which every node that does not have right child has a thread to its? |
| ((OPTION\_A)) | Pre-order successor |
| ((OPTION\_B)) | In-order successor |
| ((OPTION\_C)) | In-order predecessor |
| ((OPTION\_D)) | Post-order successor |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In binary representation of tree the left child of root node will be at location |
| ((OPTION\_A)) | 0 |
| ((OPTION\_B)) | 1 |
| ((OPTION\_C)) | 2 |
| ((OPTION\_D)) | 3 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In array representation of binary tree right child of root node will be at  location |
| ((OPTION\_A)) | 0 |
| ((OPTION\_B)) | 1 |
| ((OPTION\_C)) | 2 |
| ((OPTION\_D)) | 3 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In array representation of binary tree left child of root node will be at  location |
| ((OPTION\_A)) | 0 |
| ((OPTION\_B)) | 1 |
| ((OPTION\_C)) | 2 |
| ((OPTION\_D)) | 3 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In array representation of binary tree root node will be at  location |
| ((OPTION\_A)) | 0 |
| ((OPTION\_B)) | 1 |
| ((OPTION\_C)) | 2 |
| ((OPTION\_D)) | 3 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | To arrange a tree in ascending order which of the following traversal is used? |
| ((OPTION\_A)) | Preorder |
| ((OPTION\_B)) | Inorder |
| ((OPTION\_C)) | Postorder |
| ((OPTION\_D)) | None |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Depth of complete binary tree with n nodes is |
| ((OPTION\_A)) | O(logn) |
| ((OPTION\_B)) | O(logn+1)-1 |
| ((OPTION\_C)) | O(logn-1)n-1 |
| ((OPTION\_D)) | O(logn+1) |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Preorder traversal of binary search tree is as follows: 10,8,7,9,18,11,12. If  tree is used for sorting then where will be 15 placed? |
| ((OPTION\_A)) | Right child of 18 |
| ((OPTION\_B)) | Left child of 9 |
| ((OPTION\_C)) | Left child of 11 |
| ((OPTION\_D)) | Right child of 12 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

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| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In Preorder traversal the node which is visted first is |
| ((OPTION\_A)) | Root |
| ((OPTION\_B)) | Leftmost |
| ((OPTION\_C)) | Right most |
| ((OPTION\_D)) | parent of a right most leaf |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Consider a preorder traversal sequence of a tree is : 1 2 4 5 3. In array  representation you can store node 4 at location |
| ((OPTION\_A)) | 4 |
| ((OPTION\_B)) | 5 |
| ((OPTION\_C)) | 6 |
| ((OPTION\_D)) | 3 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Number of nodes in strict binary tree with n leaf nodes |
| ((OPTION\_A)) | N |
| ((OPTION\_B)) | 2n |
| ((OPTION\_C)) | 2n-1 |
| ((OPTION\_D)) | 2n+1 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |