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| 1. | Consider an undirected graph G with 100 nodes. The maximum number of edges to be included in G so that the graph is not connected is |
| A. | 2451 |
| B. | 4950 |
| C. | 4851 |
| D. | 9900 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Correct Answer is C** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **If a graph with n vertices has more than ((n - 1)\*(n - 2))/2 edges then it is connected.** |

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| 2. | The amortized time complexity to perform \_\_\_\_\_\_ operation(s) in Splay trees is O(Ig n). |
| A. | Search |
| B. | Search & Insert |
| C. | Search & Delete |
| D. | Search,Insert & Delete |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Correct Answer is D** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **For m operations to be performed on splay tree it requires O(mlogn) steps where n is the size of the tree.On an average the time complexity of each operation on the splay tree is Search:Searching for a node in the tree would take O(logn). Insert:Inserting a node in to the tree takes O(logn). Delete:Deleting a node from the tree takes O(logn).** |

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| 3. | Suppose that the splits at every level of Quicksort are in proportion 1-β to β, where 0 ‹ β ‹ = 0.5 is a constant. The number of elements in an array is n. The maximum depth is approximately |
| A. | 0.5 β Ig n |
| B. | 0.5 (1 − β) Ig n |
| C. | β (Ig n)/(Ig β) |
| D. | − (Ig n)/Ig (1 − β) |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Correct Answer is D** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **The minimum depth follows a path that always takes the smaller part of partition - i.e, that multiplies the number of elements by β . One iteration reduces the number of elements from n to β n , and i iterations reduces the number of elements to β i n . At a leaf, there is just one remaining element, and so at a minimum depth leaf of depth m, we have β mn=1.Thus, β m=1/n. Taking logs, we get m log β = - log n or m = - log n / log β .  Similarly, maximum depth corresponds to always taking the larger part of the partition, i.e., keeping a fraction 1 - β of the elements each time. The maximum depth M is reached when there is one element left, that is, when ( 1 - β) M n = . Thus, M = - lg(n) / lg(1 - β ).** |

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| 4. | The min. number of nodes in a binary tree of depth d (root at level 0) is |
| A. | 2d − 1 |
| B. | 2d + 1 − 1 |
| C. | d + 1 |
| D. | d |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Correct Answer is C** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Counting the root node the minimum number of nodes will be d+1. this can be verified by taking either left or right skewed binary tree with any arbitrary depth d.** |

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| 5. | The efficient data structure to insert/delete a number in a stored set of numbers is |
| A. | Queue |
| B. | Linked list |
| C. | Doubly linked list |
| D. | Binary tree |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Correct Answer is C** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **because in case of doubly linked list only the node to be inserted/deleted needs to be manipulated and no traversals in forward or backward direction required for the operation so it is more efficient.** |

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| 6. | Consider the following statements : (i) A graph in which there is a unique path between every pair of vertices is a tree. (ii) A connected graph with e = v − 1 is a tree. (iii) A graph with e = v − 1 that has no circuit is a tree. Which of the above statements is/are true ? |
| A. | (i) & (iii) |
| B. | (ii) & (iii) |
| C. | (i) & (ii) |
| D. | All of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Correct Answer is D** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Equivalent definitions of trees A graph in which there is a unique path between every pair of vertices is a tree. A connected graph with e = v - 1 is a tree. A graph with e = v - 1 that has no circuit(cycle) is a tree.** |

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| Consider the In-order and Post-order traversals of a tree as given below : In-order : j e n k o p b f a c l g m d h i Post-order : j n o p k e f b c l m g h i d a The Pre-order traversal of the tree shall be |
| A. | a b f e j k n o p c d g l m h i |
| B. | a b c d e f j k n o p g l m h i |
| C. | a b e j k n o p f c d g l m h i |
| D. | j e n o p k f b c l m g h i d a |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Correct Answer is C** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **http://www.brightways.org/dsmcq/q7ans.png** |

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| 8. | A simple graph G with n − vertices is connected if the graph has |
| A. | (n − 1) (n − 2)/2 edges |
| B. | more than (n − 1) (n − 2)/2 edges |
| C. | less than (n − 1) (n − 2)/2 edges |
| D. | ∑ k(i=1) C(ni, 2) edges |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Correct Answer is B** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **http://www.brightways.org/dsmcq/q8ans.png** |
| 9. | **Linked Lists are not suitable for \_\_\_\_\_.** |
| A. | **Binary Search** |
| B. | **Polynomial Manipulation** |
| C. | **Insertion** |
| D. | **Radix Sort** |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Correct Answer is A** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Since linked list are not having array like arrangement where middle element can be calculated by just using index positions. This is not available in Linked List due to Dynamic nature. So Linked List does not support Binary Search.** |

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| 10. | The time complexity of an efficient algorithm to find the longest monotonically increasing subsequence of n numbers is |
| A. | O(n) |
| B. | O(n Ig n) |
| C. | O(n2) |
| D. | None of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Correct Answer is C** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=1#!) | **Let S[1]S[2]S[3]...S[n] be the input sequence.  Let L[i] , 1<=i <= n, be the length of the longest monotonically increasing subsequence of the first i letters S[1]S[2]...S[i] such that the last letter of the subsequence is S[i].  Let P[i] be the position of the letter before S[i] in the longest subsequence of the first i letters such that the last letter is S[i]. T is the resulting subsequence. Algorithm  1. for i=1 to n do 2. L[i] = 1 3. P[i] = 0 4. for j = 1 to i-1 do  5. if S[j] < S[i] and L[j] >= L[i] then 6. L[i]= L[j]+1 7. P[i]= j 8. endif 9. endfor 10. endfor 11. Get the largest value L[k] in L[1]�L[n] 12. i = 1 // backtracking 13. j = k 14. Do  15. T[i] = S[j] 16. i++; j= P[j] 17. Until j=0 18 Output L[k] and the reverse of T.  The loop in line 1 -10 only iterate n times, the inner loop line 4-9 will execute O(n2) times, So the time complexity of the algorithm is O(n2).** |

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| 11. | Given a binary search trees for a set of n=5 keys with the following probabilities : i     0        1        2        3        4        5 p           0.15    0.10    0.05    0.10    0.20 qi    0.05   0.10    0.05   0.05   0.05   0.10 The expected optimal cost of the search is |
| A. | 2.65 |
| B. | 2.70 |
| C. | 2.75 |
| D. | 2.80 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Correct Answer is C** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **http://www.brightways.org/dsmcq/q11ans.png** |
| 12. | The worst case time complexity of AVL tree is better in comparison to binary search tree for |
| A. | Search and Insert Operations |
| B. | Search and Delete Operations |
| C. | Insert and Delete Operations |
| D. | Search, Insert and Delete Operations |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Correct Answer is D** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Search is O(log N) since AVL trees are always balanced. Insertion and deletions are also O(logn) Where as in case of BST it is O(n)** |
| 13. | In which tree, for every node the height of its left subtree and right subtree differ almost by one ? |
| A. | Binary search tree |
| B. | AVL tree |
| C. | Threaded Binary Tree |
| D. | Complete Binary Tree |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Correct Answer is B** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **As per definition of AVL tree An AVL tree is a binary search tree whose left subtree and right subtree differ in height by no more than 1, and whose left and right subtrees are themselves AVL trees.** |
| 14. | A hash function f defined as f (key) = key mod 13, with linear probing is used to insert keys 55, 58, 68, 91, 27, 145. What will be the location of 79 ? |
| A. | 1 |
| B. | 2 |
| C. | 3 |
| D. | 5 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Correct Answer is D** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Sol : f(55) = 3, f(58) = 6, f(68) =3, 4, f(91) = 0, f(27) = 1, f(145) = 2, f(79) = 5** |
| 15. | Consider the tree given below : http://www.brightways.org/graph/graph1.png Using the property of eccentricity of a vertex, find every vertex that is the centre of the given tree. |
| A. | d & h |
| B. | c & k |
| C. | g, b, c, h, i, m |
| D. | c & h |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Correct Answer is D** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Let G be a graph and v be a vertex of G. The eccentricity of the vertex v is the maximum distance from v to any vertex. That is, e(v)=max{d(v,w):w in V(G)}.** |
| 16. | Given an empty stack, after performing push (1), push (2), Pop, push (3), push (4), Pop, Pop, push(5), Pop, what is the value of the top of the stack ? |
| A. | 4 |
| B. | 3 |
| C. | 2 |
| D. | 1 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Correct Answer is D** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) |  |
| 17. | Enumeration is a process of |
| A. | Declaring a set of numbers |
| B. | Sorting a list of strings |
| C. | Assigning a legal values possible for a variable |
| D. | Sequencing a list of operators |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Correct Answer is C** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) |  |
| 18. | The time complexities of some standard graph algorithms are given. Match each algorithm with its time complexity ? (n and m are no. of nodes and edges respectively) a. Bellman Fordalgorithm1. O (m log n) b. Kruskals algorithm 2. O (n3) c. Floyd Warshallalgorithm 3. O(mn) d. Topological sorting 4. O(n + m) Codes : a b c d |
| A. | 3 1 2 4 |
| B. | 2 4 3 1 |
| C. | 3 4 1 2 |
| D. | 2 1 3 4 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Correct Answer is A** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) |  |
| 19. | Let T(n) be the function defined by T(n) = 1 and T(n) = 2T (n/2) + n, which of the following is TRUE ? |
| A. | T(n) = O( n) |
| B. | T(n) = O(log2n) |
| C. | T(n) = O(n) |
| D. | T(n) = O(n2) |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Correct Answer is C** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) |  |
| 20. | Which of the following permutations can be obtained in the output using a stack of size 3 elements assuming that input, sequence is 1, 2, 3, 4, 5 ? |
| A. | 3, 2, 1, 5, 4 |
| B. | 5, 4, 3, 2, 1 |
| C. | 3, 4, 5, 2, 1 |
| D. | 3, 4, 5, 1, 2 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) | **Correct Answer is B** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=2#!) |  |

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MCQs

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| 21. | Suppose there are logn sorted lists of n logn elements each. The time complexity of producing a sorted list of all these elements is (use heap data structure) |
| A. | O(n log logn) |
| B. | ?(n logn) |
| C. | ? (n logn) |
| D. | ? (n3/2) |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) |  |
| 22. | Skolmization is the process of |
| A. | bringing all the quantifiers in the beginning of a formula in FDL |
| B. | removing all the universal quantifiers |
| C. | removing all the existential quantifiers |
| D. | all of the above. |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) | **Skolemization is the process of replacing existentially quantified variables in a formula with new constants (called Skolem constants) or functions (called Skolem functions). If an existential quantifier is in the scope of some universal quantifiers, the new symbol is a function of the corresponding universally quantified variables. The result of Skolemization is not, strictly speaking, equivalent to the original formula, because new symbols may have been introduced, but the result is inconsistent iff the the original formula is inconsistent.** |
| 23. | The postfix expression AB + CD � \* can be evaluated using a |
| A. | stack |
| B. | tree |
| C. | queue |
| D. | linked list |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) |  |
| 24. | The post order traversal of a binary tree is DEBFCA. Find out the preorder traversal |
| A. | ABFCDE |
| B. | ADBFEC |
| C. | ABDECF |
| D. | None of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) |  |
| 25. | The number of colours required to properly colour the vertices of every planer graph is |
| A. | 2 |
| B. | 3 |
| C. | 4 |
| D. | 5 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) |  |
| 26. | A binary search tree is a binary tree : |
| A. | All items in the left subtree are less than root |
| B. | All items in the right subtree are greater than or equal to the root |
| C. | Each subtree is itself a binary search tree |
| D. | All of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) |  |
| 27. | Leaves of which of the following trees are at the same level? |
| A. | Binary tree |
| B. | B-tree |
| C. | AVL-tree |
| D. | Expression tree |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) |  |
| 28. | The Inorder traversal of the tree will yield a sorted listing of elements of tree in |
| A. | Binary tree |
| B. | Binary search tree |
| C. | Heaps |
| D. | None of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) |  |
| 29. | Which of the following data structure is linear type? |
| A. | Strings |
| B. | Lists |
| C. | Queues |
| D. | All of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) |  |
| 30. | To represent hierarchical relationship between elements, which data structure is suitable? |
| A. | Dequeue |
| B. | Priority |
| C. | Tree |
| D. | All of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=3#!) |  |

31.The upper bound of computing time of m coloring decision problem isA.O(nm)B.O(nm)C.O(nmn)D.O(nmmn)[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

Correct Answer is c

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

32.Which one of the following statements is incorrect?A.The number of regions corresponds to the cyclomatic complexity.B.Cyclometric complexity for a flow graph G is V(G) = N � E + 2, where E is the number of edges and N is the number of nodes in the flow graph.C.Cyclometric complexity for a flow graph G is V(G) = E � N + 2, where E is the number of edges & N is the number of nodes in the flow graph.D.Cyclometric complexity for a flow graph G is V(G) = P + 1, where P is the number of predicate nodes contained in the flow graph G.[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

Correct Answer is b

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

33.Consider a weighted undirected graph with positive edge weights and let (u, v) be an edge in the graph. It is known that the shortest path from source vertex s to u has weight 53 and shortest path from s to v has weight 65. Which statement is always true?A.Weight (u, v) < 12B.Weight (u, v) = 12C.Weight (u, v) > 12D.Weight (u, v) > 12[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

Correct Answer is c

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

34.Number of binary trees formed with 5 nodes areA.32B.36C.120D.42[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

Correct Answer is d

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

35.The following postfix expression is evaluated using a stack 823^/23\* + 51\* � The top two elements of the stack after first \* is evaluatedA.6, 1B.5, 7C.3, 2D.1, 5[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

Correct Answer is a

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

36.Cyclometric complexity of a flow graph G with n vertices and e edges isA.V(G) = e+n�2B.V(G) = e�n+2C.V(G) = e+n+2D.V(G) = e�n�2[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

Correct Answer is b

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

37.For a B-tree of height h and degree t, the total CPU time used to insert a node isA.O(h log t)B.O(t log h)C.O(t2h)D.O(th)[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

Correct Answer is d

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

38.The time complexity to build a heap with a list of n numbers isA.O(log n)B.O(n)C.O(n logn)D.O(n2)[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

Correct Answer is b

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

39.The value of postfix expression : 8 3 4 + � 3 8 2 / + \* 2 $ 3 + isA.17B.131C.64D.52[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

Correct Answer is d

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)40.Consider the following statements for priority queue : S1 : It is a data structure in which the intrinsic ordering of the elements does determine the result of its basic operations. S2 : The elements of a priority queue may be complex structures that are ordered on one or several fields. Which of the following is correct?A.Both S1 and S2 are incorrect.B.S1 is correct and S2 is incorrect.C.S1 is incorrect and S2 is correct.D.Both S1 and S2 are correct.[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

Correct Answer is d

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=4#!)

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| 41. | Give as good a big�O estimate as possible for the following functions : (nlogn+n2)(n3+2) and (n!+2n) (n3+log(n2+1)) |
| A. | O(n5+2n2) & O(n3\*n!) |
| B. | O(n5) & O(n3\*2n) |
| C. | O(n5) & O(n3\* n!) |
| D. | O(n5+2n2) & O(n3\*2n) |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) |  |
| 42. | Which of the following connected simple graph has exactly one spanning tree? |
| A. | Complete graph |
| B. | Hamiltonian graph |
| C. | Euler graph |
| D. | None of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) |  |
| 43. | How many edges must be removed to produce the spanning forest of a graph with N vertices, M edges and C connected components? |
| A. | M+N�C |
| B. | M�N�C |
| C. | M�N+C |
| D. | M+N+C |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) |  |
| 44. | Suppose you want to delete the name that occurs before �Vivek� in an alphabetical listing. Which of the following data structures shall be most efficient for this operation? |
| A. | Circular linked list |
| B. | Doubly linked list |
| C. | Linked list |
| D. | Dequeue |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) |  |
| 45. | The number of nodes in a complete binary tree of height n: |
| A. | 2n-1-1 |
| B. | 2n-1+1 |
| C. | 2n+1-1 |
| D. | 2n+1+1 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) |  |
| 46. | Binary search algorithm employs the strategy of. |
| A. | Divide and Conquer technique |
| B. | Dynamic Programming |
| C. | Branch & Bound technique |
| D. | Greedy Strategy |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) |  |
| 47. | Give the name of the Linear list in which elements can be added at ends but not in the middle: |
| A. | Array |
| B. | Queue |
| C. | Tree |
| D. | Circular Queue |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) |  |
| 48. | If every node �a� in a graph G is adjacent to every node �b� in G, then the graph is: |
| A. | Isolated graph |
| B. | Connected graph |
| C. | Eulerian graph |
| D. | Complete graph |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) |  |
| 49. | Full Binary tree with n leaves contain: |
| A. | n nodes |
| B. | 2n-1 nodes |
| C. | n-1 nodes |
| D. | log n nodes |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) |  |
| 50. | In any undirected graph, the sum of the degrees of all nodes is: |
| A. | must be even |
| B. | is always ODD |
| C. | need not be even |
| D. | is twice number of edges |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=5#!) |  |

51.An undirected graph is Eulerian if and only if all vertices of G are of the sum of the degrees of all nodes is:A.Same degreeB.ODD degreeC.Need not be ODDD.is twice number of edges[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)

Correct Answer is b

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)52.An undirected graph G has n vertices and n-1 edges then G is:A.CyclicB.Addition of edge will make it cyclicC.EulerianD.Is a Tree[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)

Correct Answer is d

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)53.Graph having every pair of vertices connected is called:A.Cycle graphB.Complete graphC.Peterson graphD.Is a Tree[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)

Correct Answer is b

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)54.The Eigen vectors of a real symmetric matrix corresponding to different Eigen values are:A.Orthogonal matrixB.Singular matrixC.Non-singular matrixD.Inverse matrix[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)

Correct Answer is a

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)55.The complexity of linear search algorithm of an array of n elements is:A.O log(n)B.O (n)C.O nlog(n)D.O(nXn)[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)

Correct Answer is b

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)56.�n� elements of a queue are to be reversed using another queue. The number of �ADD� and �REMOVE� required to do so is,A.2\*nB.4\*nC.nD.the task cannot be done[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)

Correct Answer is d

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)57.Prim�s algorithm is a method available for finding out the minimum cost of a spanning tree. Its time complexity is given by:A.O(n\*n)B.O(n logn)C.O(n)D.O(1)[View/Hide Ans](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)

Correct Answer is a

[Explanation](http://www.brightways.org/multiple-choice-questions-for-data-structure.php?page=6#!)

|  |  |
| --- | --- |
| 1. | If the disk head is located initially at 32, find the number of disk moves required with FCFS if the disk queue of I/O blocks requests are 98, 37, 14, 124, 65, 67. |
| A. | 239 |
| B. | 310 |
| C. | 321 |
| D. | 325 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **By applying FCFS we can easily compute = (98-32) + (37-32) + (32-14) + (124-14) + (124-65) + (67-65) = 321 Hence (c) is correct.** |
| 2. | Which of the following memory allocation scheme suffers from external fragmentation ? |
| A. | Segmentation |
| B. | Pure demand paging |
| C. | Swapping |
| D. | Paging |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **External fragmentation occurs in systems that use pure segmentation. Because each segment has varied size to fit each program size, the holes (unused memory) occur external to the allocated memory partition.** |
| 3. | Consider a system having m resources of the same type. These resources are shared by 3 processes A, B and C which have peak demands of 3, 4 and 6 respectively. For what value of m deadlock will not occur ? |
| A. | 7 |
| B. | 9 |
| C. | 10 |
| D. | 13 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Consider the peak demand situation of resources (A,B,C)=(3,4,6). For a specific number of resources,to conclude there is possibility of deadlock (not deadlock free), we have to find atleast one resource allocation which results in deadlock, that is an allocation that cannot completly satisy the resouce requirements of even one process . With number of shared resources m = 7, the following resource allocation (for example)among 3 process A,B,C (2,3,2).Process A holding 2 resources and waitning for 1, Process B holding 3 resource and waiting for 1 and process C holding 2 resources and waiting for 4 more resources. This is a deadlock situation. With number of shared resources m = 9, the following resource allocation (for example)among 3 process A,B,C (2,3,4).Process A holding 2 resources and waitning for 1, Process B holding 3 resource and waiting for 1 and process C holding 4 resources and waiting for 2 more resources. This is a deadlock situation. With number of shared resources m = 10, the following resource allocation (for example)among 3 process A,B,C (2,3,5).Process A holding 2 resources and waitning for 1, Process B holding 3 resource and waiting for 1 and process C holding 5 resources and waiting for 1 more resource. This is a deadlock situation.  But for m >=11 , the resource allocation is deadlock free.** |
| 4. | Pre-emptive scheduling is the strategy of temporarily suspending a running process |
| A. | before the CPU time slice expires |
| B. | to allow starving processes to run |
| C. | when it requests I/O |
| D. | to avoid collision |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **The preemptive scheduling feature allows a pending high-priority job to preempt a running job of lower priority. The lower-priority job is suspended and is resumed as soon as possible. Use preemptive scheduling if you have long-running, low-priority jobs causing high-priority jobs to wait an unacceptably long time.** |
| 5. | Resources are allocated to the process on non-sharable basis is |
| A. | mutual exclusion |
| B. | hold and wait |
| C. | no pre-emption |
| D. | circular wait |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **In Mutual Exclusion Condition The resources involved are non-shareable. i.e. At least one resource (thread) must be held in a non-shareable mode, that is, only one process at a time claims exclusive control of the resource. If another process requests that resource, the requesting process must be delayed until the resource has been released.** |
| 6. | In round robin CPU scheduling as time quantum is increased the average turn around time |
| A. | increases |
| B. | decreases |
| C. | remains constant |
| D. | varies irregularly |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **The Performance of the RR algorithm depends heavily on the size of the time quantum. At one extreme, if the time quantum is extremely large, the RR policy is the same as the FCFS policy. If the time quantum is extremely small (say 1 millisecond), the RR approach is called processor sharing, and appears (in theory) to users as though each of n processes has its own processor running at 1/n the speed of the real processor. This approach was used in Control Data Corporation (CDC) hardware to implement 10 peripheral processors with only one set of hardware and 10 sets of registers. The hardware executes one instruction for one set of registers, then goes on to the next. The cycle continues, resulting in 10 slow processors rather than one fast one. (Actually, since the processor was much faster than memory and each instruction referenced memory, the processors were not much slower than a single processor would have been.) The response time is the time taken between the process submission and the first response produced. In RR algorithm, the value of time quantum or the time slice, plays a crucial role in deciding how effective the algorithm is. If the time quantum is too small, there could be lot of context switching happening which could slow down the performance. If the time quantum is too high, then RR behaves like FCFS. If the time quantum is increased, the average response time varies irregularly. If you take any comprehensive material on operating system, you will come across a graph which depicts this behavior. So the answer is option D.** |
| 7. | Pool based allocation of memory achieves better usage. Memory can be preempted from inactive programs and used to accommodate active programs. This is called |
| A. | Preemption |
| B. | Swapping |
| C. | Spooling |
| D. | Scheduling |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **This is the definition of Swapping.** |
| 8. | Which of these is an example of a virtual resource? |
| A. | Print server |
| B. | Virtual machine |
| C. | Virtual memory |
| D. | All of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **A Virtual machine is like a server, but instead of electronics, it is a set of software files. Each virtual machine represents a complete system � with processors, memory, networking, storage and BIOS. A virtual machine runs operating systems and applications without any modifications just like a physical server. So all of these are examples of Virtual Resources.** |
| 9. | Which concept explains the working of an Operating System? |
| A. | It is event driven |
| B. | It is object oriented |
| C. | It is procedure based system software |
| D. | It is a collection of procedures that interact with each other |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Object Oriented, Procedure Oriented or Interaction Procedures are the mechanisms of the Programming Languages. So out of above features Operating System is Event Driven** |
| 10. | Which of these is/are the desirable features of an Operating system |
| A. | Extensible |
| B. | Portable |
| C. | Reliable |
| D. | All of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php#!) | **Portability, Extencibility, Reliability are the most desirable features of Operating System.** |

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MCQs

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| 11. | Blocking and Caching are the terms associated with which Operating system functions respectively |
| A. | Memory management and Disk Scheduling |
| B. | IOCS and Disk Scheduling |
| C. | IOCS and Memory management |
| D. | Process management and IOCS |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **Blocking of records reduces effective I/O time per logical record by reading/writing many logical records in a single I/O operation. Caching is the technique of keeping some of the file data in memory so that it can be accessed without having to perform an I/O operation  Both terms are associated with Input Output Control Systems and Disk scheduling** |
| 12. | Which of these is not a term describing the collection of Operating Programs |
| A. | Monitor |
| B. | Kernel |
| C. | Supervisor |
| D. | Server |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **A server is a system (software and suitable computer hardware) that responds to requests across a computer network to provide, or help to provide, a network service. Servers can be run on a dedicated computer, which is also often referred to as "the server",so it is not a collection of operating system programs.** |
| 13. | Transparency is a desirable feature of which type of Operating system- |
| A. | Batch Processing |
| B. | Real time |
| C. | Distributed |
| D. | Time sharing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **A distributed system that is able to present itself to user and application as if it were only a single computer system is said to be transparent. It is one of the most desirable feature of Distributed Systems. Various types of Transparencies are  Access Transparency, Location Transparency, Migration Transparency, Relocation Transparency, Replication Transparency, Concurrency Transparency, Failure Transparency, Persistence Transparency** |
| 14. | Which operating system implementation has to focus on the issue of Good response time |
| A. | Batch Processing |
| B. | Multiprogramming |
| C. | Distributed |
| D. | Time sharing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) |  |
| 15. | Program Priorities, Preemption are the key concepts of |
| A. | Batch Processing |
| B. | Real time |
| C. | multiprogramming |
| D. | Time sharing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) |  |
| 16. | Which operating system implementation has to focus on the issue of resource sharing? |
| A. | Batch Processing |
| B. | Multiprogramming |
| C. | Distributed |
| D. | Time sharing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) |  |
| 17. | This OS interleaves execution of processes in an application program to meet its deadline |
| A. | Batch Processing |
| B. | Real time |
| C. | multiprogramming |
| D. | Time sharing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) |  |
| 18. | What in multiprogramming OS provides a foolproof method of implementing memory protection to avoid program interference? |
| A. | Direct Memory Access |
| B. | Privileged mode |
| C. | Memory Protection |
| D. | Both 2 and 3 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) |  |
| 19. | What are the functions of multiprogramming OS? |
| A. | Scheduling |
| B. | Memory Management |
| C. | I/O management |
| D. | All of above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) |  |
| 20. | Applications like Banking and reservations require which type of OS? |
| A. | Real Time |
| B. | Hard Real Time |
| C. | Soft Real Time |
| D. | None of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=2#!) |  |

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| --- | --- |
| 21. | What feature of RTOS is supported by executing parts of a computation in different computer systems? |
| A. | Computation speed up |
| B. | Resource sharing |
| C. | Reliability |
| D. | Communication |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) |  |
| 22. | Which OS employs the techniques of fault tolerance and graceful degradation to ensure continuity of operation? |
| A. | Batch Processing |
| B. | Real time |
| C. | Distributed |
| D. | Time sharing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) |  |
| 23. | Pool based allocation of memory achieves better usage. Memory can be preempted from inactive programs and used to accommodate active programs. This is called |
| A. | Preemption |
| B. | Swapping |
| C. | Spooling |
| D. | Scheduling |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) |  |
| 24. | Which of these is an example of a virtual resource? |
| A. | Print server |
| B. | Virtual machine |
| C. | Virtual memory |
| D. | All of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) |  |
| 25. | Which concept explains the working of an Operating System? |
| A. | It is event driven |
| B. | It is object oriented |
| C. | It is procedure based system software |
| D. | It is a collection of procedures that interact with each other |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) |  |
| 26. | Which of these is/are the desirable features of an Operating system |
| A. | Extensible |
| B. | Portable |
| C. | Reliable |
| D. | All of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) |  |
| 27. | Blocking and Caching are the terms associated with which Operating system functions respectively |
| A. | Memory management and Disk Scheduling |
| B. | IOCS and Disk Scheduling |
| C. | IOCS and Memory management |
| D. | Process management and IOCS |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) |  |
| 28. | Which of these is not a term describing the collection of Operating Programs |
| A. | Monitor |
| B. | Kernel |
| C. | Supervisor |
| D. | Server |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) |  |
| 29. | Transparency is a desirable feature of which type of Operating system- |
| A. | Batch Processing |
| B. | Real time |
| C. | Distributed |
| D. | Time sharing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) |  |
| 30. | Which operating system implementation has to focus on the issue of Good response time |
| A. | Batch Processing |
| B. | Multiprogramming |
| C. | Distributed |
| D. | Time sharing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=3#!) |  |

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MCQs

|  |  |
| --- | --- |
| 31. | Program Priorities, Preemption are the key concepts of |
| A. | Batch Processing |
| B. | Real time |
| C. | multiprogramming |
| D. | Time sharing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) |  |
| 32. | Which operating system implementation has to focus on the issue of resource sharing? |
| A. | Batch Processing |
| B. | Multiprogramming |
| C. | Distributed |
| D. | Time sharing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) |  |
| 33. | This OS interleaves execution of processes in an application program to meet its deadline |
| A. | Batch Processing |
| B. | Real time |
| C. | multiprogramming |
| D. | Time sharing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) |  |
| 34. | What in multiprogramming OS provides a foolproof method of implementing memory protection to avoid program interference? |
| A. | Direct Memory Access |
| B. | Privileged mode |
| C. | Memory Protection |
| D. | Both 2 and 3 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) |  |
| 35. | What are the functions of multiprogramming OS? |
| A. | Scheduling |
| B. | Memory Management |
| C. | I/O management |
| D. | All of above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) |  |
| 36. | Applications like Banking and reservations require which type of OS? |
| A. | Real Time |
| B. | Hard Real Time |
| C. | Soft Real Time |
| D. | None of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) |  |
| 37. | What feature of RTOS is supported by executing parts of a computation in different computer systems? |
| A. | Computation speed up |
| B. | Resource sharing |
| C. | Reliability |
| D. | Communication |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) |  |
| 38. | Which OS employs the techniques of fault tolerance and graceful degradation to ensure continuity of operation? |
| A. | Batch Processing |
| B. | Real time |
| C. | Distributed |
| D. | Time sharing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) |  |
| 39. | If ttra and tcam are the time taken to transfer a block from memory to cache and access time of cache memory respectively, then what will be the effective memory access time if h is the hit ratio |
| A. | h+ ttra \*(1+ tcam) |
| B. | h\*tcam +(1-h) \*(ttra+tcam) |
| C. | h +(1-h) \*(ttra+tcam) |
| D. | (h+1)\*tcam +(1-h) \*(ttra+tcam) |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) |  |
| 40. | Programs tend to make memory accesses that are in proximity of previous access this is called |
| A. | spatial locality |
| B. | temporal locality |
| C. | reference locality |
| D. | access locality |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=4#!) |  |

MCQs

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| 41. | Which term means to access some data and instructions repeatedly? |
| A. | spatial locality |
| B. | temporal locality |
| C. | reference locality |
| D. | access locality |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) |  |
| 42. | Processor architectures use several levels of cache memories to reduce the effective memory access time. which is the correct match i)L1 Cache a) part of memory chip ii)L2 Cache b) Cache on CPU Chip ii)L3 Cache c) Cache external to CPU |
| A. | i)-a ii)-b iii)-c |
| B. | i)-b ii)-c iii)-a |
| C. | i)-c ii)-b iii)-a |
| D. | i)-c ii)-a iii)-b |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) |  |
| 43. | An Intel processor uses a cache block size of 128 bytes and a memory transfer to cache is about 10 times the access time of cache memory. with cache hit ratio of 0.97 what percent will be the effective memory access to that of access time of memory |
| A. | 20 percent |
| B. | 30 percent |
| C. | 40 percent |
| D. | 50 percent |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) |  |
| 44. | Contents of which fields of Program Status Word (PSW) define the subsequent actions of the CPU |
| A. | Condition code, Privileged mode, Program Counter |
| B. | Condition code, Privileged mode, interrupt mask |
| C. | Privileged mode, interrupt mask, interrupt code |
| D. | Privileged mode, interrupt mask, Program Counter |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) |  |
| 45. | Which of the following should be a privileged instruction- |
| A. | Load Bound registers |
| B. | Load a value in a CPU Register |
| C. | Forcibly terminate a process |
| D. | All of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) |  |
| 46. | Throughput of a multiprogramming OS that processes n programs over th eperiod of time that starts t0 and ends at tf is |
| A. | (tf-t0)/n |
| B. | tf\*n/t0 |
| C. | n/(tf-t0) |
| D. | n\*tf\*t0 |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) |  |
| 47. | Which of these are the reasons for CPU-bound programs having higher priority than the I/O bound programs |
| A. | CPU utilization is better in CPU-bound programs |
| B. | I/O bound programs do not get an opportunity to be executed |
| C. | Period of concurrent CPU and I/O bound activities is rare. |
| D. | All of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) |  |
| 48. | Which of these is incorrect in context of Real Time Operating System? |
| A. | Permits creation of multiple processes within an application. |
| B. | Permits priorities to be assigned to the processes. |
| C. | Doesn't allow programmer to define interrupts and interrupt processing routines |
| D. | Provides fault tolerance and graceful degradation capabilities. |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) |  |
| 49. | Which of these is not a goal of Scheduling Algorithm for Different Operating Systems |
| A. | Fairness |
| B. | balance |
| C. | maximize throughput |
| D. | Policy enforcement |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) |  |
| 50. | Which of these is a disadvantage of first Come First Serve? |
| A. | Convoy Effect |
| B. | Small average and worst-case waiting times |
| C. | Simplicity |
| D. | non-preemptive |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=5#!) |  |

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| 51. | What is the duration of a time quantum in Round-Robin Scheduling? |
| A. | 10-100 millisec |
| B. | 10-100 nanosec |
| C. | 100-1000 millisec |
| D. | 100-1000 nanosec |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |
| 52. | As a rule of thumb what percentage of the CPU bursts should be shorter than the time quantum? |
| A. | 80% |
| B. | 70% |
| C. | 60% |
| D. | 50% |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |
| 53. | Interval between the time since submission of the job to the time its results become available, is called |
| A. | Response Time |
| B. | Throughput |
| C. | Waiting time |
| D. | Turnaround Time |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |
| 54. | A scheduler which selects processes from Primary memory is called |
| A. | Long Term Scheduler |
| B. | Medium Term Scheduler |
| C. | Short Term Scheduler |
| D. | Job Scheduler |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |
| 55. | The scheduling in which CPU is allocated to the process with least CPU-burst time is called |
| A. | Priority Scheduling |
| B. | Round Robin Scheduling |
| C. | Multilevel Queue Scheduling |
| D. | Shortest job first Scheduling |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |
| 56. | Which of the following is a fundamental process state |
| A. | blocked |
| B. | executing |
| C. | Waiting |
| D. | swapped |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |
| 57. | Which of the following approaches require knowledge of the system state? |
| A. | deadlock detection. |
| B. | deadlock prevention. |
| C. | deadlock avoidance. |
| D. | all of the above. |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |
| 58. | Which scheduling policy is used for a batch processing operating system |
| A. | Shortest-job First. |
| B. | Round-Robin. |
| C. | Priority Based |
| D. | First-Come-First-Serve. |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |
| 59. | A critical section is a program segment |
| A. | which is having a higher priority. |
| B. | where shared resources are accessed. |
| C. | which forces deadlocks. |
| D. | where code is shared by programs. |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |
| 60. | Which amongst the following is a valid page replacement policy? |
| A. | RU policy (Recurrently used) |
| B. | LRU policy (Least Recently Used) |
| C. | only a |
| D. | both a and b |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=6#!) |  |

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| 61. | SSTF stands for |
| A. | Shortest-Seek-time-first scheduling |
| B. | simple-seek-time-first |
| C. | smallest � seek-time-first. |
| D. | None of the above |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) |  |
| 62. | Before proceeding with its execution, each process must acquire all the resources it needs is called |
| A. | pre-emption. |
| B. | circular wait. |
| C. | hold and wait |
| D. | deadlock. |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) |  |
| 63. | The total time to prepare a disk drive mechanism for a block of data to be read from is its |
| A. | Access Time |
| B. | Seek time |
| C. | latency plus seek time |
| D. | Access time plus seek time plus transmission time |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) |  |
| 64. | Which of these is a technique of improving the priority of process waiting in Queue for CPU allocation |
| A. | Starvation |
| B. | Relocation |
| C. | Promotion |
| D. | Ageing |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) | **Correct Answer is d** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) |  |
| 65. | In which of the following page replacement policies Balady�s anomaly does not occurs? (A) FIFO (B) LRU (C) LFU (D) NRU |
| A. | All of the above |
| B. | B, C and D |
| C. | A and B. |
| D. | Only A |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) | **Correct Answer is b** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) |  |
| 66. | Page fault frequency in an operating system is reduced when the |
| A. | processes tend to be of an equal ratio of the I/O-bound and CPU-bound |
| B. | size of pages is increased |
| C. | locality of reference is applicable to the process |
| D. | processes tend to be CPU-bound |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) | **Correct Answer is c** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) |  |
| 67. | Cycle stealing is a term closely associated with- |
| A. | DMA |
| B. | Virtual Memory |
| C. | Processor Scheduler |
| D. | Disk manager |
| [View/Hide Ans](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) | **Correct Answer is a** |
| [Explanation](http://www.brightways.org/multiple-choice-question-for-operating-system.php?page=7#!) |  |