Q&A

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Question No: 747
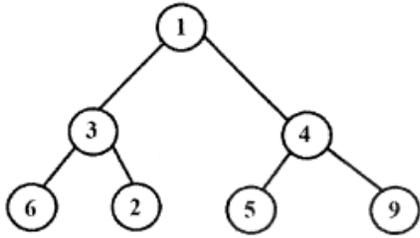
Select the option that correctly identifies pre-order traversal for given tree.

(A) 6, 2, 3, 5, 9, 4, 1

(B) 1, 3, 6, 2, 4, 5, 9

(C) 6, 3, 2, 1, 5, 4, 9

(D) None of the above

Option A
Option B
Option C
Option D

Answer: B

Explanation:

According to pre-order tree traversal algorithm, we are required to visit the current (root) node, then traverse left sub-tree and finally traverse the right sub-tree at the end. Therefore, pre-order tree traversal of given binary tree will be as follows: 1, 3, 6, 2, 4, 5 and 9.

Question No: 748
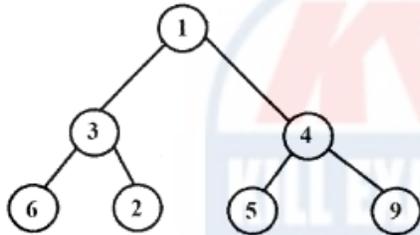
Select the option that correctly identifies post-order traversal for given tree.

(A) 6, 2, 3, 5, 9, 4, 1   (B) 1, 3, 6, 2, 4, 5, 9

(C) 6, 3, 2, 1, 5, 4, 9   (D) None of the above

Option A
Option B
Option C
Option D

Answer: A

Explanation:

According to post-order tree traversal algorithm, we are required to traverse left sub-tree, then right sub-tree and finally visit the current (root) node. Therefore, post-order tree traversal of given binary tree will be as follows: 6, 2, 3, 5, 9, 4 and 1.

Question No: 749

Graphs can be represented using _____ method(s).

(A) Adjacency matrix

(B) Incidence matrix

(C) Adjacency list

(D) All of the above

Option A
Option B
Option C
Option D

Answer: D

Explanation:

Graphs allow arbitrary relationships between any two vertices (nodes). Tree is a special (structured) type of graph. A graph 'G' is defined as G = (V, E) where V is the set of all vertices and E is the set of all edges.

A graph can be represented as adjacency matrix, adjacency list or an incidence matrix.
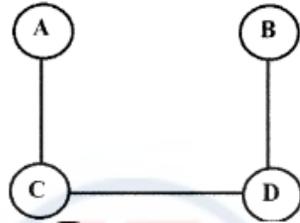
Adjacency matrix – Represents graph in the form of a n x n matrix where n is the number of vertices.
Adjacency list – Represents graph in the form of a n x 1 array of pointers where each element points to a linked list of edges that are found on vertices.
Incidence matrix – Represents n x m matrix where n is the number of vertices and m is the number of edges.

Question No: 750

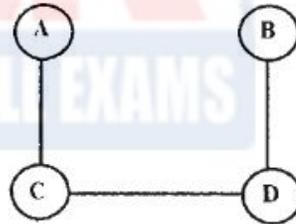Consider the following graph for problems 17.4 h) and 17.4 i).

The size of adjacency matrix required to represent this graph is _____.
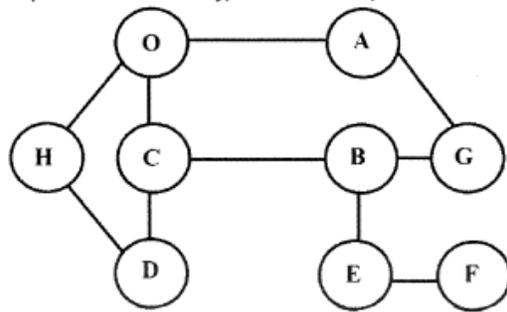
Answer: 4X4

Explanation:

Since there are 4 vertices, we require a 4 x 4 adjacency matrix as shown below. Matrix entries for adjacent vertices are set to 1. For example, A – C = 1, C – A = 1 but A – B = 0.

	A	B	C	D
A	0	0	1	0
B	0	0	0	1
C	1	0	0	1
D	0	1	1	0

Question No: 751

_____ will be the output of breadth first search (BFS) algorithm on this graph.

(A) O A G B E F C D H

(B) O A C H G B D E F
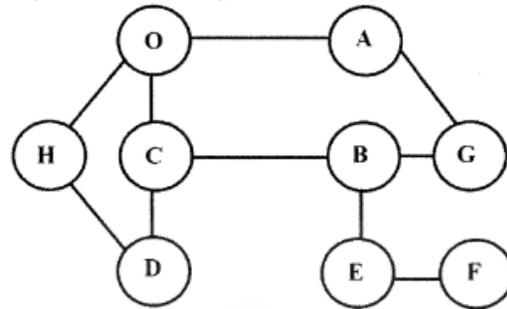
(C) O A H C D B E F G

(D) O A G B C D H E F

Answer: 6

Explanation:

As explained in previous solution, there are 6 non-zero entries in the adjacency matrix of given graph.

Question No: 752

Consider the following graph for problems 17.4 j) and 17.4 k).

_____ will be the output of breadth first search (BFS) algorithm on this graph.

(A) O A G B E F C D H

(B) O A C H G B D E F

(C) O A H C D B E F G

(D) O A G B C D H E F

Option A
Option B
Option C
Option D

Answer: B

Explanation:

Breadth first search (BFS) algorithm is used for traversing a graph (and sometimes trees). It requires visiting all the unvisited nodes adjacent to starting node. This process is repeated for each visited node as shown in the figure on right.

Question No: 753

_____ will be the output of depth first search (DFS) algorithm on this graph.

(A) O A G B E F C D H

(B) O A C H G B D E F

(C) O A H C D B E F G
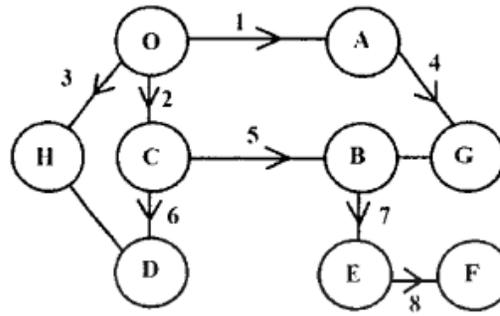
(D) O A G B C D H E F
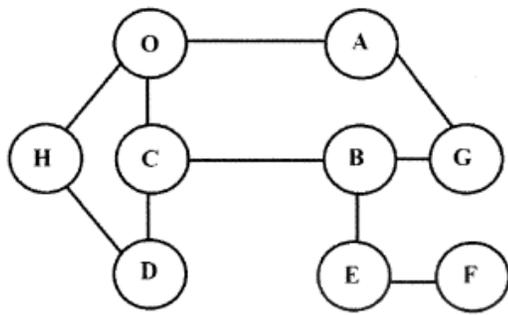
Option A
Option B
Option C
Option D

Answer: D

Explanation:

Depth first search (DFS) algorithm is used for traversing a graph (and sometimes trees). It requires visiting one unvisited adjacent node and traversing down one path as deep as possible before backtracking to the last visited node and repeating the process until all nodes have been visited.
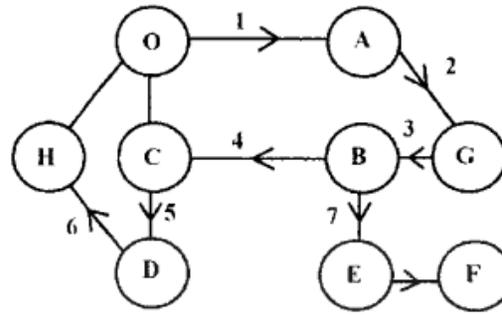
Question No: 754

Software with a tendency to break due to changes in unrelated segments is called ___ .

Answer: Fragile

Explanation:

Rigid – A software design that is difficult to change.

Fragile – A software design that is prone to breaking in multiple places whenever a change is made.

Portable – A software design that ca n be used in different environments.

Immobile – A software design that is difficult to reuse for different projects.

Question No: 755

Static software testing involves verification through _____.

(A) program code review

(B) program code execution

(C) software maintenance

(D) Options A, B and C are all correct

Option A
Option B
Option C
Option D

Answer: A

Explanation:

Static software testing involves verification using program code reviews, walk-throughs and inspections.

Question No: 756

Glass box testing of a software is also known as _____ testing.

Answer: White Box

Explanation:

Glass box/White box testing involves detailed investigation of code's internal logic and structure. Internal details of the code are made available to the tester so that tester can investigate if any section of the code is non-compliant with performance requirements. White-box testing is in-depth detailed. But it can be time consuming and costly.

Question No: 757

_____ testing is conducted at software's interface without close examination of its internal structure.

Answer: Black Box

Explanation:

Black-box testing does not require tester to have any knowledge of code's internal structure. Tester does not have access to source code. Tester simply provides a set of inputs and compares the outputs with a pre-established set of expected results to determine whether the software is meeting performance requirements or not. Black-box testing does not require highly skilled testers and it can be completed quickly. However, it provides limited coverage and requires good test cases to be effective.

Question No: 758

_____ is the process of testing individual pieces of source code before handing it over for formal execution of test cases.

(A) System testing   (B) Integration testing

(C) Unit testing   (D) User acceptance testing

Option A
Option B
Option C
Option D

Answer: C

Explanation:

Unit-testing involves dynamically executing units of codes to verify their individual performance. It helps in isolating code sections and demonstrating their functionality. However, unit testing cannot catch the problems that may result from interaction of different code sections i.e. problems residing at the boundaries.
Helpful tip – Also review the procedure involved in system-testing, integration testing and user acceptance testing. Understand the difference between dynamic and static testing.

Question No: 759

_____ model requires sequential execution of design, integration, and testing.

(A) Iterative

(B) Spiral

(C) Waterfall

(D) Code-and-fix

Option A
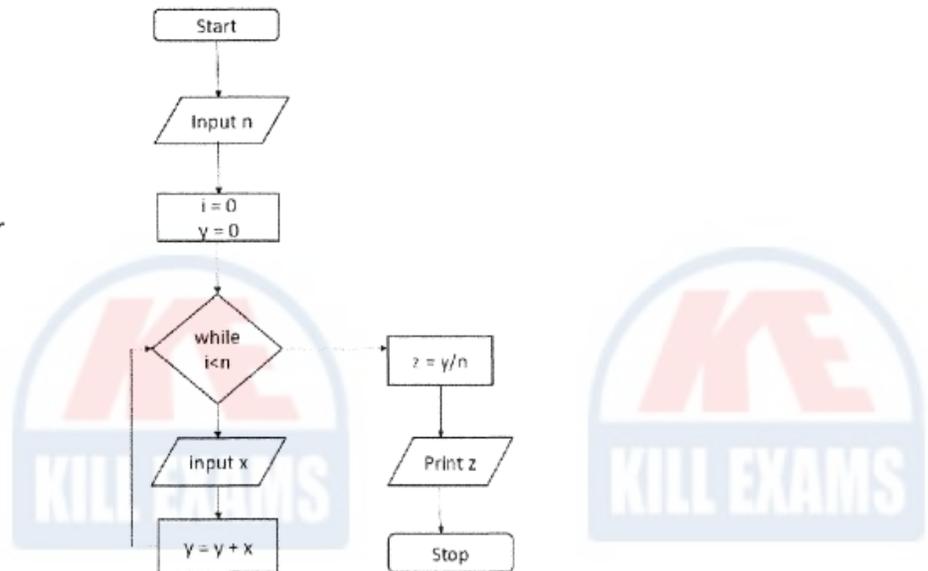Option B
Option C
Option D

Answer: C

Explanation:

Waterfall model is a linear/sequential process of software development which consists of predetermined phases and milestones. It is managed by means of milestone reviews, baselines, and version controls. Some of the key steps involved in waterfall model include specification development, software design, implementation, and testing. Being a one-pass software development model, it has the advantage of being simple, easy to implement and manage. However, its rigidity does not allow major scope changes during execution and it is not suitable for complex projects.
Helpful tip – Also review iterative model, V-model, and code-and-fix model.

Question No: 760

_____ describes the functionality of algorithm implemented by following flow chart.

(A) Sum calculation

(B) Average calculation

(C) Finding the largest number

(D) Finding the smallest number

Start

Input n

i = 0
y = 0

while
i<n

z = y/n

input x

Print z

y = y + x

Stop

Option A
Option B
Option C
Option D

Answer: B

Explanation:

The algorithm represented by flow chart in this problem calculates and prints average of 'n' inputs.

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