بِسۡمِ ٱللَّهِ ٱلرَّحۡمَٰنِ ٱلرَّحِيمِ

کیا آپ نے آج درود شریف پڑھا

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CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 15 of 15 (Start time: 11:49:29 PM, 24 January 2023)

In Knapsack Problem, each item must be entirely accepted or rejected, is called _____ problem.

Select the correct option

- (●) 0-1
- ( ) Fractional
- ( ) Linear
- ( ) Optimal

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 4 of 15 (Start time: 11:45:42 PM, 24 January 2023)

Suppose we have 5 matrices A, B, C, D and E. What is the correct expansion of m[3,4] in chain matrix multiplication?

Select the correct option

- ○ m[3, 4] = m[3, 3] + m[4, 4] + p0 · p3 · p4
- ○ m[3, 4] = m[3, 4] + m[4, 4] + p2 · p3 · p4
- ○ m[3, 4] = m[3, 3] + m[3, 4] + p2 · p3 · p4
- ◉ m[3, 4] = m[3, 3] + m[4, 4] + p2 · p3 · p4

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 2 of 15 (Start time: 11:44:46 PM, 24 January 2023)

If matrix A of dimension p x q is multiplied with matrix B of dimension q x r, then each entry in resultant matrix takes _____ t

Select the correct option

- O(1)
- O(q)
- O(p x q)
- O(q x r)

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 1 of 15 (Start time: 11:44:35 PM, 24 January 2023)

The greedy approach gives us an optimal solution when the coins are all powers of a _____denomination.

Select the correct option

- ○ Constant
- ○ Variable
- ◉ Fixed
- ○ Static

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 13 of 15 (Start time: 11:42:50 PM, 24 January 2023)

The Knapsack problem belongs to the domain of _____ problems.

Select the correct option

- ○ Linear solution
- ○ Searching
- ○ Sorting
- ◉ Optimization

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 8 of 15 (Start time: 11:41:12 PM, 24 January 2023)

In general, the activity selection problem is to select a _____.

Select the correct option

- ( ) maximum-size set of interfering activities
- ( ) minimum-size set of mutually non-interfering activities
- ( ) minimum-size set of interfering activities
- (•) maximum-size set of mutually non-interfering activities

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 7 of 15 (Start time: 11:41:00 PM, 24 January 2023)

In context of activity selection algorithm, time is dominated by sorting of the activities by _____.

Select the correct option

- ○ Start Times
- ○ Average Times
- ○ CPU Burst Times
- ◉ Finish Times

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 5 of 15 (Start time: 11:40:35 PM, 24 January 2023)

In Knapsack Problem, the goal is to put items in the knapsack such that the value of the items is _____ subject to weight limit of knap

Select the correct option

- ○ None of the given options
- ○ Maximized
- ○ Decreased
- ○ Minimized

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 3 of 15 (Start time: 11:40:10 PM, 24 January 2023)

In recursive formulation of Knapsack Problem:
V[0, j] = _____ for j>=0

Select the correct option

- (●) 0
- ( ) 1
- ( ) -1
- ( ) 2

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 2 of 15 (Start time: 11:39:53 PM, 24 January 2023)

In Activity scheduling algorithm, the width of a rectangle _____

Select the correct option

- ○ Directs towards recursion
- ○ Is always ignored
- ◉ Indicates the duration of an activity
- ○ Should be maximized

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 1 of 15 (Start time: 11:39:23 PM, 24 January 2023)

Suppose you are given infinite coins of 1, 2, 3, and 4. Select the ways of the minimum number of coins that required to achieve a sum of 6:

Select the correct option

- ○ 1
- ○ 3
- ○ 4
- ◉ 2

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 13 of 15 (Start time: 11:37:35 PM, 24 January 2023)

The general coin change problem can be solved using_____.

Select the correct option

- (●) Dynamic programming
- ( ) Greedy Algorithm
- ( ) Divide and Conquer
- ( ) Recursion

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 7 of 15 (Start time: 11:36:36 PM, 24 January 2023)

In chain matrix multiplication, if there are n items, there are _____ ways in which outer most pair of parentheses can placed.

Select the correct option

- ○ n^2
- ○ n+1
- ◉ n-1
- ○ 2n

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 4 of 15 (Start time: 11:35:16 PM, 24 January 2023)

The greedy approach gives us an optimal solution when the coins are all powers of a _____denomination.

Select the correct option

- (●) Fixed
- ( ) Static
- ( ) Constant
- ( ) Variable

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 3 of 15 (Start time: 11:35:02 PM, 24 January 2023)

In greedy algorithm, at each phase, you take the_____ you can get right now, without regard for future consequences.

Select the correct option

- (●) Best
- ( ) Minimum
- ( ) Worst
- ( ) Good

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 2 of 15 (Start time: 11:34:45 PM, 24 January 2023)

In _____ algorithm, you hope that by choosing a local optimum at each step, you will end up at a global optimum.

Select the correct option

- ○ Brute force
- ○ Divide and conquer
- ◉ Greedy
- ○ Simple

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 1 of 15 (Start time: 11:34:17 PM, 24 January 2023)

In Dynamic Programming based solution of knapsack problem, to compute entries of 'V', we will imply a(n) _____ approach.

Select the correct option

- ○ Combination
- ○ Brute Force
- ◉ Inductive
- ○ Subjective

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 15 of 15 (Start time: 11:33:09 PM, 24 January 2023)

In context of activity selection algorithm, time is dominated by sorting of the activities by _____.

Select the correct option

- ○ Average Times
- ○ CPU Burst Times
- ○ Start Times
- ◉ Finish Times

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 13 of 15 (Start time: 11:31:43 PM, 24 January 2023)

Those problems in which Greedy finds good, but not always best is called a greedy_____.

Select the correct option

- (●) Heuristic
- ( ) Result
- ( ) Solution
- ( ) Algorithm

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 12 of 15 (Start time: 11:31:29 PM, 24 January 2023)

In greedy algorithm, at each phase, you take the_____ you can get right now, without regard for future consequences.

Select the correct option

- ○ Minimum
- ○ Worst
- ○ Good
- ◉ Best

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 11 of 15 (Start time: 11:30:36 PM, 24 January 2023)

If we have 6 metrices in chain matrix multiplication problem then the number of table entries must be?

Select the correct option

- 36
- 30
- 25
- 12

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 9 of 15 (Start time: 11:29:44 PM, 24 January 2023)

In chain matrix multiplication, if there are n items, there are _____ ways in which outer most pair of parentheses can placed.

Select the correct option

- (●) n-1
- ( ) n+1
- ( ) 2n
- ( ) n^2

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 8 of 15 (Start time: 11:29:32 PM, 24 January 2023)

Catalan numbers are related the number of different _____ on 'n' nodes.

Select the correct option

- ○ functions
- ◉ binary trees
- ○ linked lists
- ○ arrays

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 7 of 15 (Start time: 11:29:17 PM, 24 January 2023)

In Fractional Knapsack problem, one is allowed to take fraction of an item for _____

Select the correct option

- for fraction of the weight
- Both, fraction of the weight and value
- None of the given options
- for fraction of the value

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 6 of 15 (Start time: 11:28:53 PM, 24 January 2023)

In recursive formulation of Knapsack Problem:
V[0, j] = _____ for j>=0

Select the correct option

- 1
- 0
- -1
- 2

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 5 of 15 (Start time: 11:28:36 PM, 24 January 2023)

_____items are not allowed in 0/1 Knapsack problem.

Select the correct option

- 0/1
- Fractional
- 0
- 1

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 4 of 15 (Start time: 11:28:30 PM, 24 January 2023)

How many steps are involved to design the dynamic programming strategy?

Select the correct option

- 2
- 1
- 3
- 4 (selected)

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 4 of 15 (Start time: 11:28:30 PM, 24 January 2023)

How many steps are involved to design the dynamic programming strategy?

Select the correct option

- 2
- 1
- 3
- 4

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 1 of 15 (Start time: 11:26:51 PM, 24 January 2023)

A/an _____is one in which you want to find, not just a solution, but the best solution.

Select the correct option

- ( ) Best Problem
- ( ) Divide and Conquer
- ( ) NP Complete problem
- (•) Optimization Problem

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 15 of 15 (Start time: 11:24:39 PM, 24 January 2023)

In Knapsack Problem, the goal is to put items in the knapsack such that the value of the items is _____ subject to weight limi

Select the correct option

- ○ Decreased
- ○ Minimized
- ○ None of the given options
- ◉ Maximized

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 14 of 15 (Start time: 11:23:42 PM, 24 January 2023)

We can't utilize a divide-and-conquer strategy for Chain Matrix Multiplication because _____.

Select the correct option

- ○ We use divide and conquer for sorting only
- ◉ We do not know the optimum k
- ○ We can easily perform it in linear time
- ○ Size of data is not given

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 12 of 15 (Start time: 11:22:04 PM, 24 January 2023)

The number of edges that come out of a vertex is called the _____ of that vertex in a digraph.

Select the correct option

- post-degree
- pre-degree
- out-degree
- in-degree

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 11 of 15 (Start time: 11:21:37 PM, 24 January 2023)

The coin change problem is to find the minimum number of coins required to get the sum S of infinite coins of denominations a1, a2 _____.

Select the correct option

- ○ Divide and conquer
- ○ Backtracking
- ○ Greedy algorithm
- ◉ Dynamic programming

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 10 of 15 (Start time: 11:20:44 PM, 24 January 2023)

Counting Money problem:

Select the correct option

- ○ Can be optimally solved by greedy algorithm
- ○ Can be solved by simple recursive algorithm
- ○ Can not be solved by brute force algorithm
- ◉ can not be optimally solved by greedy algorithm

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 10 of 15 (Start time: 11:20:44 PM, 24 January 2023)

Counting Money problem:

Select the correct option

- ○ Can be optimally solved by greedy algorithm
- ○ Can be solved by simple recursive algorithm
- ○ Can not be solved by brute force algorithm
- ◉ can not be optimally solved by greedy algorithm

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 9 of 15 (Start time: 11:20:18 PM, 24 January 2023)

Catalan numbers are related the number of different _____ on 'n' nodes.

Select the correct option

- ○ linked lists
- ○ functions
- ◉ binary trees
- ○ arrays

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 8 of 15 (Start time: 11:19:46 PM, 24 January 2023)

In Activity selection problem, intuitively _____.

Select the correct option

- ( ) Short activities are not attractive
- ( ) Duration of the activities does not matter
- ( ) There are always short activities as input
- (•) We do not like long activities

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 7 of 15 (Start time: 11:19:13 PM, 24 January 2023)

In general in comparison with Fractional Knapsack problem, _____

Select the correct option

- (●) 0-1 knapsack problem is hard to solve
- ( ) 0-1 knapsack problem is very easy to solve
- ( ) We cannot compare them
- ( ) Both are easy to solve

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 6 of 15 (Start time: 11:18:25 PM, 24 January 2023)

Time complexity of Dynamic Programming based algorithm for computing the minimum cost of Chain Matrix Multiplication is _____.

Select the correct option

○	n^2 (n square)
○	n
●	n^3 (n cube)
○	log n

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 5 of 15 (Start time: 11:17:32 PM, 24 January 2023)

How many steps are involved to design the dynamic programming strategy?

Select the correct option

- 2
- 3
- 1
- 4 (selected)

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 4 of 15 (Start time: 11:16:20 PM, 24 January 2023)

We can multiply two matrices A and B only when they are compatible which means:

Select the correct option

- Number of rows in A must be equal to number of rows in B
- Number of columns in A must be equal to number of columns in B
- (●) Number of columns in A must be equal to number of rows in B
- Number of rows and columns do not matter

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 3 of 15 (Start time: 11:15:49 PM, 24 January 2023)

In Fractional Knapsack problem, one is allowed to take fraction of an item for _____

Select the correct option

- ○ for fraction of the weight
- ○ for fraction of the value
- ◉ Both, fraction of the weight and value
- ○ None of the given options

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 3 of 15 (Start time: 11:15:49 PM, 24 January 2023)

In Fractional Knapsack problem, one is allowed to take fraction of an item for _____

Select the correct option

- for fraction of the weight
- for fraction of the value
- Both, fraction of the weight and value
- None of the given options

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 2 of 15 (Start time: 11:14:56 PM, 24 January 2023)

In Dynamic Programming based solution of Knapsack Problem, if we decide to take an object 'i', then we gain _____.

Select the correct option

- ○ None of the given option
- ○ V (Total Value of all items)
- ◉ vi (Value of object i)
- ○ W (Total Weight of Knapsack)

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 2 of 15 (Start time: 11:14:56 PM, 24 January 2023)

In Dynamic Programming based solution of Knapsack Problem, if we decide to take an object 'i', then we gain _____.

Select the correct option

- None of the given option
- V (Total Value of all items)
- vi (Value of object i)
- W (Total Weight of Knapsack)

CS502 - Fundamentals of Algorithms (Quiz No. 03)

Question # 1 of 15 (Start time: 11:14:11 PM, 24 January 2023)

_____items are not allowed in 0/1 Knapsack problem.

Select the correct option

- (●) Fractional
- ( ) 0
- ( ) 1
- ( ) 0/1