CS502 VU Final Term Past Papers Solved By Malik!!

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To seek knowledge is the duty of every Muslim man and woman

Question No:01 **(Marks:01)** **VU Malik**

If we encode and compress text using ASCII standard each character is represented b

A. Fixed length code word of 4 bits
B. Variable length code word up to 4 bits
C. Fixed length code word of 8 bits
D. Variable length code word up to 8 bits

Question No:02 **(Marks:01)** **VU Malik**

G power T for graph can be computed in

A. Theta(VE)
B. Theta(V log E)
C. Theta(E log V)
D .Theta (V+E)

Question No:03 **(Marks:01)** **VU Malik**

Adding any edge to free tree

A .Keep it free tree and increase the size of the tree
B. Create a unique cycle
C. Not allow to add edge to free tree
D. Create multiple cycles

Question No:04 **(Marks:01)** **VU Malik**

Which sorting algorithn is faster :

A. O(n^2)
B. O(nlogn)
C. O(n+k)
D. O(n^3)

Question No:05 **(Marks:01)** **VU Malik**

There are no_____edges in undirected graph.

A . Forward
B. Back
C. Cross
D. Both forward and back

Question No:06 **(Marks:01)** **VU Malik**

Adding any edge to a free tree creates a unique_____.

A. Vertex
B. cycle
C. Edge

D. Strong component

Question No:07 (Marks:01) VU Malik

Networks are complete in the sense that it is possible from any location in the network to reach any other location in the digraph.

A. True
B. False

Question No:08 (Marks:01) VU Malik

Runtime complexity of Prim's algorithm is_____.

A. V log V
B. E log V
C. log V
D. None of the above

Question No:09 (Marks:01) VU Malik

In Prim's algorithm, we start with the_____vertex r; it can be any vertex.

A. First
B. Leaf
C. root
D. Mid

Question No:10 (Marks:01) VU Malik

Adding any edge to a free tree creates a unique cycle.

A. true
B. false

Question No:11 (Marks:01) VU Malik

For undirected graph, there is no distinction between forward and back edges.

A. true
B. false

Question No:12 (Marks:01) VU Malik

in strong components algorithm, first of all DFS is run for computing finish times of vertices.

A. true
B. false

Question No:13 (Marks:01) VU Malik

Which method is preferable for dealing with chain matrix multiplication?

A. Divide and conquer strategy

B. Dynamic programming formulation

C. Graph theory

D. Greedy Approach

Question No:14 (Marks:01) VU Malik

Huffman algorithm produces the…….prefix code tree.

A. Better

B. Optimal

C. Worst

D. Best

Question No:15 (Marks:01) VU Malik

A….w is adjacent to vertex v if there is an edge from v to w.

A. Acyclic

B. Vertex

C. Loop

D. Cycle

Question No:16 (Marks:01) VU Malik

Using ASCII standard the string "greedy" will be encoded with

A. 44 bits

B. 120 bits

C. 40 bits

D. 48 bits

Question No:17 (Marks:01) VU Malik

In activity scheduling algorithm, each activity is represented by a

A. Rectangle

B. Square

C. Circle

D. Triangle

Question No:18 (Marks:01) VU Malik

Those problems in which greedy finds good, but not always best is called a greedy…..

A. Heuristic

B. Solution

C. Result

D. Algorithm

Question No:19 (Marks:01) VU Malik

The knapsack problem belongs to the domain of…..Problems

A. Searching

B. Sorting

C. Linear solution

D. Optimization

Question No:20 (Marks:01) VU Malik

The general coin change problem can be solved using

A. Recursion

B. Greedy algorithm

C. Dynamic programming

D. Divide and conquer

Question No:21 (Marks:01) VU Malik

Huffman algorithm generates an optimum..... code

A. Postfix

B. Infix

C. None of the given options

D. Prefix

Question No:22 (Marks:01) VU Malik

.....ways of representing graphics

A. 1

B. **2**

C. 3

D. 4

Question No:23 (Marks:01) VU Malik

Knapsack word originates from……language

A. German

B. English

C. French

D. Norwegian

Question No:24 (Marks:01) VU Malik

Graphs are important .....model for many application problems

A. Mathematical
B. Unpredictable
C. Haphazard
D. Unsystematic

Question No:25 (Marks:01) VU Malik

Which type of algorithm is harder to prove the correctness?

A. Dynamic
B. Greedy
C. Divide and conquer
D. Brute force

Question No:26 (Marks:01) VU Malik

Items are not allowed in 0/1 knapsack problem

A. Fractional
B. 0
C. 1
D. 0/1

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Question No:27 (Marks:01) VU Malik

Matrix multiplication is a(n)..... operation

A. Nether commutative nor associative
B. Transitive
C. Commutative
D. Associative

Question No:28 (Marks:01) VU Malik

For a Diagraph G= (V.E), Sum of in-degree (v) --.

A. Not equal to sum of out-degree(v)
B. = sum of out-degree(v)
C. < sum of out-degree(v)
D. > sum of out-degree(v)

Question No:29 **(Marks:01)** **VU Malik**

DFS or BFS yields a of the graph.

A. Traversed tree
B. Spanning tree **Page 125**
C. Simple tree
D. Free tree

Question No:30 **(Marks:01)** **VU Malik**

Using ASCII code, each character is represented by a fixed-length code of bits per character.

A. 4
B. 6
C. 10
D. **8**

Question No:31 **(Marks:01)** **VU Malik**

In Knapsack Problem, the goal is to put items in the Knapsacksuch that the value of the items is----------subject to weight limit of the Knapsack.

A. Minimized
B. Decreased
C. Maximized
D. None of the above given

Question No:32 **(Marks:01)** **VU Malik**

A graph is said to be acyclic if it contains --.

A. At least one cycle
B. Exactly one cycle
C. Always more than one cycle
D. No cycles

Question No:33 **(Marks:01)** **VU Malik**

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

A. Post-degree
B. in-degree
C. out-degree
D. pre-degree

Question No:34 (Marks:01) VU Malik

If Matrix-A has dimensions "3x2" and Matrix-B has dimensions "2x3", then multiplication ofMatrix-A and Matrix-B will result a new Matrix-C having dimensions.

A. 3x2
B. 2x3
C. 2x2
D. 3x3

Question No:35 (Marks:01) VU Malik

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

A. Optimization problem
B. Divide and Conquer
C. NP complete problem
D. Best problem

Question No:36 (Marks:01) VU Malik

Fractional Knapsack is founded on ---------- method.

A. Greedy page
B. Recursive
C. Divide and Conquer
D. Dynamic programming

Question No:37 (Marks:01) VU Malik

Find the maximum value of the items which can carry using knapsack weight capacity **=50**

ITEM WEIGHT	10	20	30	70
VALUE	70	20	80	200

A. 90
B. 280
C. 200
D. 100

Question No:38 (Marks:01) VU Malik

If the graph is represented using an adjacency matrix, then Breadth-first search takes ---------- time.

A. O(E+1)
B. O(V^2)
C. O(V)

D. O(E)

Question No:39 (Marks:01) VU Malik

In inductive approach of Knapsack problem, we consider 2 cases, ---------- or --.Median, Mode

A. Recursive, Iterative

B. Leave object, Take object

C. Sequentially, Parallel

Question No:40 (Marks:01) VU Malik

A Greedy algorithm can NOT be used to solve all the problems.

A. Dynamic programming

B. Memorization programming

C. Edit-distance programming

D. Storing value programming

Question No:41 (Marks:01) VU Malik

In Huffman encoding, the is the number of occurrences of a character divided by the total characters in the message.

A. Counting

B. Parsing

C. Relative Probability

D. Weight

Question No:42 (Marks:01) VU Malik

The Binary Tree constructed by a Huffman Encoding is a:

A. Full Binary Tree

B. Partial Binary Tree

C. Incomplete Binary Tree

D. None of the given option

Question No:43 (Marks:01) VU Malik

Following is not the application of Edit Distance Problem.

A. Speech recognition

B. Spelling correction

C. Ascending order

D. Computational Molecular Biology

Question No:44 (Marks:01) VU Malik

Consider three Matrices X, Y, Z of dimensions 1x2, 2x3, 3x4 respectively. The numberof multiplication of(XYZ) is:

A. 18
B. 32
C. 24
D. 30

Question No:45 (Marks:01) VU Malik

In ----Knapsack Problem, limitation is that an item can either be put in the bag or not. Fractional items are not allowed.

A. 0
B. 1
C. 0/1
D. Fractional

Question No:46 (Marks:01) VU Malik

An in-place sorting algorithm is one that uses additional array for storage.

A. Always
B. Permanently
C. Does not
D. Sometime

Question No:47 (Marks:01) VU Malik

If Matrix-A has dimensions “pxq” and Matrix-B has dimensions “qxr”, then multiplication ofMatrix-A and Matrix-B will result a new Matrix-C having dimensions.

A. P x q
B. P x r
C. q x r
D. q x p

Question No:48 (Marks:01) VU Malik

Counting sort is suitable to sort the elements in range 1 to K.

A. K is large
B. K is small
C. K may be large or small
D. None

Question No:49 (Marks:01) VU Malik

When matrix A of 5x 3 is multiply with matrix B of 3x 4 then the multiplication required is:

A. 15
B. 12
C. 36
D. 60

Question No:50 (Marks:01) VU Malik

---------- is a linear time sorting algorithm.

Merge sort
Quick sort
Bubble sort
Radix sort

Question No:51 (Marks:01) VU Malik

In Dynamic Programming approach, we do not store the solution to each sub problem in caseif it reappears.

A. True
B. False

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Question No:52 (Marks:01) VU Malik

Dynamic Programming approach is usually useful in solving optimization problem.

A. True
B. False

Question No:53 (Marks:01) VU Malik

Which of the following algorithm provides an optimal solution for the activity selectionproblem?

A. Divide and Conquer
B. Brute force
C. Greedy
D. Recursive

Question No:54 (Marks:01) VU Malik

A graph is if every vertex can reach every other vertex.

A. Connected
B. Cycle
C. Acyclic
D. Loop

Question No:55 (Marks:01) VU Malik

In a Huffman encoding when a new node is created by combining two nodes, the new nodeis placed in the _ .

A. Priority queue
B. Linked list
C. Min heap tree
D. Graph traversal

Question No:56 (Marks:01) VU Malik

In___algorithm, you hope that by choosing a local optimum at each step, you will endup a global optimum.

A. Simple
B. Divide and conquer
C. Greedy
D. Brute Force

Question No:57 (Marks:01) VU Malik

The string "Imncde" is coded with ASCII code, the message length would be___bits.

A. 24
B. 36
C. 48
D. 60

Question No:58 (Marks:01) VU Malik

For graph traversal, breadth-first search strategy _____

A. Is always recursive
B. Cannot br recursive
C. Cannot be non-recursive
D. Can be both recursive and non-recursive

Question No:59 (Marks:01) VU Malik

In activity scheduling algorithm , the width of a rectangle _____

A. Is always ignored
B. Directs towards recursion
C. Should be maximized
D. Indicates the duration of an activity

Question No:60 (Marks:01) VU Malik

If the graph is represented using an adjacency list, then Breadth-first search take time

A. O(V^2)

B. O(V)
C. O(V+E)
D.O(E+1)

Question No:61 (Marks:01) VU Malik

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

A. 1
B. **2**
C. 3
D. 4

Question No:62 (Marks:01) VU Malik

sing ASCII standard the string "greedy" will be encoded with

A. 48 bitS
B. 20 bits
C. 44 bits
D.40 bits

Question No:63 (Marks:01) VU Malik

The Huffman codes provide a method of data efficiency.

A. Reading/Writing
B.Encoding/Decoding
B. Divide/Conquer
C. Inserting/Deleting

Question No:64 (Marks:01) VU Malik

In the context of activity selection algorithm, time s dominated by sorting of the activities by------.

A. Start Times
B. Finish Times
C. Average Times
D.CPU Burst Times

Question No:65 (Marks:01) VU Malik

Time complexity of the "0-1" knapsack algorithm depends on----

A. Number of items
B. Capacity of the knapsack
C. Size of the Table
D. Number of items and capacity of knapsack

Question No:66 (Marks:01) VU Malik

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

A. Fixed
B. Variable
C. Constant
D.Static

Question No:67 (Marks:01) VU Malik

In Activity Selection, we say that two activities are non-interfering if their start-finishinterval overlap

A. Do
B. Do not
C. Sometimes
D.Once

Question No:68 (Marks:01) VU Malik

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

A. 2
B. 3
C. 1
D. **4**

Question No:69 (Marks:01) VU Malik

Bag is a____

A. type of algorithm
B. data structure
C. program
D.compiler

Question No:70 (Marks:01) VU Malik

If a problem is in NP-complete, it must also be in NP.

A. True
B.False

Question No:71 (Marks:01) VU Malik

The Huffman algorithm finds a optimal solution.

A. True
B. false

Question No:72 (Marks:01) VU Malik

The Huffman algorithm finds an exponential solution

A. True
B. False

Question No:73 (Marks:01) VU Malik

The Huffman algorithm finds a polynomial solution

A. True

B. False

Question No:74 (Marks:01) VU Malik

The greedy part of the Huffman encoding algorithm is to first find two nodes withs sallest frequency.

A. True

B. False

Question No:75 (Marks:01) VU Malik

The code word assigned to characters by the Huffman algorithm have the property that nocode word is the prefix of any other.

A. True

B. False

Question No:76 (Marks:01) VU Malik

Dijkestra's single source shortest path algorithm works if all edges weights are non-negativeand there are negative cost cycles.

A. True

B. False

Question No:77 (Marks:01) VU Malik

The term "coloring" came form the original application which was in architectural design.

A. True

B. False

Question No:78 (Marks:01) VU Malik

In the clique cover problem, for two vertices to be in the same group, they must be adjacent toeach other.

A. True

B. False

Question No:79 (Marks:01) VU Malik

Dijkstra's algorithm is operates by maintaining a subset of vertices

A. True

B. False

Question No:80 (Marks:01) VU Malik

We do sorting to,

A. keep elements in random positions
B. keep the algorithm run in linear order
C. keep the algorithm run in (log n) order
D. keep elements in increasing or decreasing order

Question No:81 (Marks:01) VU Malik

After partitioning array in Quick sort, pivot is placed in a position such that

A. Values smaller than pivot are on left and larger than pivot are on right
B. Values larger than pivot are on left and smaller than pivot are on right
C. Pivot is the first element of array
D. Pivot is the last element of array

Question No:82 (Marks:01) VU Malik

Merge sort is stable sort, but not an in-place algorithm

A. True
B. False

Question No:83 (Marks:01) VU Malik

A p × q matrix A can be multiplied with a q × r matrix B. The result will be a p × r matrix C.There are (p **.** r) total entries in C and each takes____ to compute.

A. O (q)
B. O (1)
C. O (n^2)
D. O (n^3)

Question No:84 (Marks:01) VU Malik

One of the clever aspects of heaps is that they can be stored in arrays without using any ------ --.

A. Pointers
B. constants
C. variables
D.functions

Question No:85 (Marks:01) VU Malik

Merge sort requires extra array storage,

A. True
B. False

Question No:86 (Marks:01) VU Malik

The Huffman codes provide a method of encoding data **inefficiently** when coded usingASCII standard.

A. True

B. False

Question No:87 (Marks:01) VU Malik

Using ASCII standard the string abacdaacac will be encoded with___bits.

A. 80
B. 160
C. 320
D. 100

Question No:88 (Marks:01) VU Malik

Using ASCII standard the string abacdaacac will be encoded with 160 bits.

A. True
B. False

Question No:89 (Marks:01) VU Malik

Using ASCII standard the string abacdaacac will be encoded with 10 bytes.

A. True
B. False

Question No:90 (Marks:01) VU Malik

The greedy part of the Huffman encoding algorithm is to first find two nodes with **character** frequency

A. True
B. False

Question No:91 (Marks:01) VU Malik

Huffman algorithm uses a greedy approach to generate an prefix code T that minimizesth expected length B (T) of the encoded string.

A. True
B. False

Question No:92 (Marks:01) VU Malik

An optimization problem is one in which you want to find,

A. Not a solution
B. An algorithm
C. Good solution
D. The best solution

Question No:93 (Marks:01) VU Malik

Although it requires more complicated data structures, Prim's algorithm for a minimumspanning tree is better than Kruskal's when the graph has a large number of vert

A. True
B. False

Question No:94 (Marks:01) VU Malik

If a problem is in NP, it must also be in P.

A. True

B. False

C. unknown

Question No:95 (Marks:01) VU Malik

What is generally true of Adjacency List and Adjacency Matrix representations of graphs?

A. Lists require less space than matrices but take longer to find the weight of an edge(v1,v2)

B. Lists require less space than matrices and they are faster to find the weight of an edge (v1,v2)

C. Lists require more space than matrices and they take longer to find the weight of an edge(v1,v2)

D. Lists require more space than matrices but are faster to find the weight of an edge (v1,V2)

Question No:96 (Marks:01) VU Malik

If a graph has v vertices and e edges then to obtain a spanning tree we have to delete

A. v edges.

B. v – e + 5 edges

C. v + e edges.

D. None of these

Question No:97 (Marks:01) VU Malik

Maximum number of vertices in a Directed Graph may be $|V^2|$

A. True

B. False

Question No:98 (Marks:01) VU Malik

The Huffman algorithm finds a (n) _solution.

A. Optimal

B. Non-optimal

C. Exponential

D.Polynomial

Question No:99 (Marks:01) VU Malik

Edge (u, v) is a forward edge if

A. u is a proper descendant of v in the tree

B. v is a proper descendant of u in the tree pg#129

C. None of these

Question No:100 (Marks:01) VU Malik

In counting sort, once we know the ranks, we simply___numbers to their finalpositions in an output array.

A. Delete
B. copy
C. Mark
D.arrange

Question No:101 (Marks:01) VU Malik

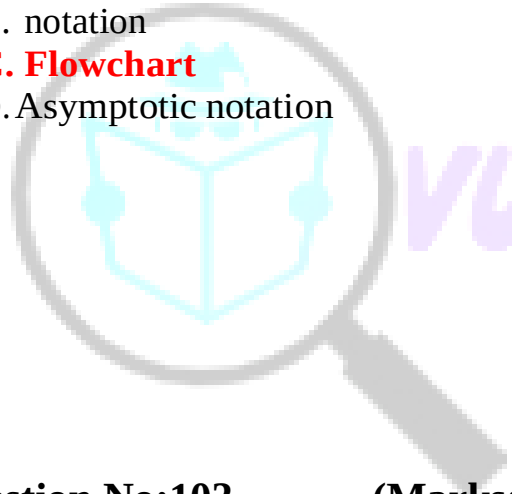
Dynamic programming algorithms need to store the results of intermediate sub-problems.

A. True
B. False

Question No:102 (Marks:01) VU Malik

_____is a graphical representation of an algorithm

A. notation
B. notation
C. Flowchart
D. Asymptotic notation



Question No:103 (Marks:01) VU Malik

Which of the following is calculated with **big o notation**?

A. Lower bounds
B. Upper bounds
C. Both upper and lower bound
D. Medium bounds

Question No:104 (Marks:01) VU Malik

Merge sort makes two recursive calls. Which statement is true after these recursivecalls finish, but before the merge step?

A. The array elements form a heap
B. Elements in each half of the array are sorted amongst themselves
C. Elements in the first half of the array are less than or equal to elements in the second half of thearray
D. None of the above

Question No:105 (Marks:01) VU Malik

What is the solution to the recurrence T(n) = T(n/2)+n, T(1) = 1

A. O(logn)
B.O(n)

C. O(nlogn)
D. O(2n)

Question No:106 (Marks:01) VU Malik

Consider the following Huffman TreeThe binary code for the string **TEA** is

A. 1000 010
B. 011 00 010
C. 10 00 110
D. 11 10 110

Question No:107 (Marks:01) VU Malik

A greedy algorithm does not work in phases.

A. True
B. False

Question No:108 (Marks:01) VU Malik

Can an adjacency matrix for a directed graph ever not be square in shape?

A. Yes
B. No

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Question No:109 (Marks:01) VU Malik

One of the clever aspects of heaps is that they can be stored in arrays without usingany_____.

A. Pointers
B. constants
C. variables
D.functions

Question No:110 (Marks:01) VU Malik

Non-optimal or greedy algorithm for money change takes_____

A. O(k)
B. O(kN)
C. O(2k)
D. O(N)

Question No:111 (Marks:01) VU Malik

Using ASCII standard the string abacdaacac will be encoded with 320 bits.

A. True
B. False

Question No:112 (Marks:01) VU Malik

Using ASCII standard the string abacdaacac will be encoded with 100 bits.

A. True

B. False

Question No:113 (Marks:01) VU Malik

Using ASCII standard the string abacdaacac will be encoded with 32 bytes

A. True

B. False

Question No:114 (Marks:01) VU Malik

Huffman algorithm uses a greedy approach to generate an **antefix** code T that minimizes the expected length B (T) of the encoded string.

A. True

B. False

Question No:115 (Marks:01) VU Malik

Depth first search is shortest path algorithm that works on un-weighted graphs.

A. True

B. False

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Question No:116 (Marks:01) VU Malik

Floyd-Warshall algorithm is a dynamic programming algorithm; the genius of thealgorithm is in the clever recursive formulation of the shortest path problem.

A. True

B. Flase

Question No:117 (Marks:01) VU Malik

Floyd-Warshall algorithm, as in the case with DP algorithms, we avoid recursiveevaluation by generating a table for

A. k

B. d^k

C. True

D. Flase

Question No:118 (Marks:01) VU Malik

The term coloring came from the original application which was in map drawing.

A. True

B. False

Question No:119 (Marks:01) VU Malik

In the clique cover problem, for two vertices to be in the same group, they

mustbe_____each other.

A. Apart from
B. Far from
C. Near to
D. Adjacent to

Question No:120 (Marks:01) VU Malik

Fixed-length codes may not be efficient from the perspective of_the total quantity of data.

A. Minimizing
B. Averaging
C. Maximizing
D. Summing

Question No:121 (Marks:01) VU Malik

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

A. Worst
B. Minimum
C. Good
D.Best

Question No:122 (Marks:01) VU Malik

The difference between Prim s algorithm and Dijkstra s algorithm is that Dijkstra salgorithm uses a same key.

A. True
B.False

Question No:123 (Marks:01) VU Malik

If there are n items, there are_possible combinations of the items.

A. 2
B. N
C. 2^n
D. 3^n

Question No:124 (Marks:01) VU Malik

In Knapsack Problem, the thief's goal is to put items in the bag such that the _____of the items does not exceed the limit of the bag.

A. Value
B.Weight
C. Length
D.Balance

Question No:125 (Marks:01) VU Malik

The knapsack problem does not belong to the domain of optimization problems.

A. True
B. False

Question No:126 (Marks:01) VU Malik

In Huffman encoding, for a given message string, the frequency of occurrence(relative probability) of each character in the message is determined last.

A. True
B. False

Question No:127 (Marks:01) VU Malik

Fixed-length codes are known for easy break up of a string into its individual characters.

A. True
B. False

Question No:128 (Marks:01) VU Malik

In Knapsack Problem, value and weight both are to be under consideration.

A. True

B. False

Question No:129 (Marks:01) VU Malik

Time complexity of DP based algorithm for computing the minimum cost of chain matrix Multiplication is_.

A. log n

B. n

C. n2

D. n3

Question No:130 (Marks:01) VU Malik

In DP based solution of knapsack problem, to compute entries of V we will imply a/an_approach.

A. Subjective

B. Inductive

C. Brute force

D. Combination

Question No:131 (Marks:01) VU Malik

A greedy algorithm sometimes works well for optimization problems.

A. True

B. False

Question No:132 (Marks:01) VU Malik

In Huffman encoding, frequency of each character can be determined by parsing themessage and how many times each character (or symbol) appears.

A. Printing

B. Incrementing

C. Counting

D. Deleting

Question No:133 (Marks:01) VU Malik

Greedy algorithm can do very poorly for some problems.

A. True

B. False

Question No:134 (Marks:01) VU Malik

The Huffman codes provide a method of__data efficiently.

A. Reading
B. Encoding
C. Decoding
D. Printing

Question No:135 (Marks:01) VU Malik

In____based solution of knapsack problem, we consider 2 cases, Leave object Or Take object.

A. Brute force
B. Dynamic programming

Question No:136 (Marks:01) VU Malik

In brute force based solution of knapsack problem, we consider 2 cases, Leave objectOr Take object.

A. TRUE
B. False

Question No:137 (Marks:01) VU Malik

_____problem, we want to find the best solution.

A. Minimization
B. Averaging
C. Optimization
D. Maximization

Question No:138 (Marks:01) VU Malik

Counting Money problem is an example which cannot be optimally solved by greedyalgorithm.

A. True
B. False

Question No:139 (Marks:01) VU Malik

Huffman algorithm generates an optimum prefix code.

A. True
B. False

Question No:140 (Marks:01) VU Malik

If the string "lmncde" is coded with ASCII code, the message length would be___bits.

A. 24
B. 36
C. 48 6*8=48
D. 60

Question No:141 (Marks:01) VU Malik

There are_nested loops in DP based algorithm for computing the minimum cost of chain matrix multiplication.

A. 2
B. **3**
C. 4

Question No:142 (Marks:01) VU Malik

A number of lectures are to be given in a single lecture hall. Optimum scheduling forthis is an example of Activity selection.

A. True
B. False

Question No:143 (Marks:01) VU Malik

The activity scheduling is a simple scheduling problem for which the greedy algorithm approach provides a/an___solution.

A. Simple
B. Sub optimal
C. Optimal
D. Non optimal

Question No:144 (Marks:01) VU Malik

The string |xyz|, if coded with ASCII code, the message length would be 24 bits.

A. True (3*8=24)
B. False

Question No:145 (Marks:01) VU Malik

An application problem is one in which you want to find, not just a solution, but the_solution.

A. Simple
B. Good
C. Best

Question No:146 (Marks:01) VU Malik

Suppose that a graph G = (V,E) is implemented using adjacency lists. What is thecomplexity of a breadth-first traversal of G?

A. O(|V |^2)
B. O(|V | |E|)
C. O(|V |^2|E|)
D. O(|v|+|E|)

Question No:147 (Marks:01) VU Malik

Which is true statement?

A. Breadth first search is shortest path algorithm that works on un-weighted graphS
B. Depth first search is shortest path algorithm that works on un-weighted graphs.
C. Both of above are true.
D. None of above are true.

Question No:148 (Marks:01) VU Malik

Using ASCII standard the string "abacdaacacwe" will be encoded with _____bits

A. 64
B. 128
C. 96
D. 120

Question No:149 (Marks:01) VU Malik

Forward edge is:

A. (u, v) where u is a proper descendent of v in the tree.
B. (u, v) where v is a proper descendent of u in the tree.
C. (u, v) where v is a proper ancesstor of u in the tree.
D. (u, v) where u is a proper ancesstor of v in the tree.

Question No:150 (Marks:01) VU Malik

In digraph G=(V,E) ;G has cycle if and only if

A. The DFS forest has forward edge.
B. The DFS forest has back edge
C. The DFS forest has both back and forward edge
D. BFS forest has forward edge

Question No:151 (Marks:01) VU Malik

Back edge is:

A. (u, v) where v is an ancestor of u in the tree.

B. (u,v) where u is an ancesstor of v in the tree.

C. (u, v) where v is an predcessor of u in the tree.

D. None of above

Question No:152 (Marks:01) VU Malik

Cross edge is :

A. (u, v) where u and v are not ancestor of one another

B. (u, v) where u is ancesstor of v and v is not descendent of u.

C.(u, v) where u and v are not ancestor or descendent of one another

C. (u, v) where u and v are either ancestor or descendent of one another.

Question No:153 (Marks:01) VU Malik

Kruskal's algorithm (choose best non-cycle edge) is better than Prim's (choose besttree edge) when the graph has relatively few edges.

A. True

B. False

Question No:154 (Marks:01) VU Malik

What algorithm technique is used in the implementation of Kruskal solution for theMST?

A. Greedy Technique

B. Divide-and-Conquer Technique

C. Dynamic Programming Technique

D. The algorithm combines more than one of the above techniques

Question No:155 (Marks:01) VU Malik

The_____given by DFS allow us to determine whether the graph contains any cycles.

A. Order

B. Time stamps

C. BFS traversing

D. Topological sort

Question No:156 (Marks:01) VU Malik

In Prim's algorithm, we will make use of_____.

A. Priority Queue

Question No:157 (Marks:01) VU Malik

_____technique is look like propagating wave-front outward.

Breath first traversal

Question No:158 (Marks:01) VU Malik

What is the time complexity to extract a vertex from the priority queue in Prim'salgorithm?

A. O (log E)
B. (V)
C. (V+E)
D. O(log V)

Question No:159 (Marks:01) VU Malik

The relationship between number of back edges and number of cycles in DFS is,

A. Both are equal
B. Back edges are half of cycles
C. Back edges are one quarter of cycles
D. There is no relationship between no. of edges and cycles

Question No:160 (Marks:01) VU Malik

You have an adjacency list for G, what is the time complexity to compute Graphtranspose G^T.?

A. (V + E)
B. (V E)
C. (V)
D. (V^2)

Question No:161 (Marks:01) VU Malik

There is relationship between number of back edges and number of cycles in DFS

A. Both are equal.
B. Cycles are half of back edges.
C. Cycles are one fourth of back edges.
D. There is no relationship between back edges and number of cycles.

Question No:162 (Marks:01) VU Malik

A digraph is strongly connected under what condition?

A. A digraph is strongly connected if for every pair of vertices u, v e V, u can reach v

B.A digraph is strongly connected if for every pair of vertices u, v e V, u can reach v and viceversa.

B. A digraph is strongly connected if for at least one pair of vertex u, v e V, u can reach v and viceversa.

C. A digraph is strongly connected if at least one third pair of vertices u, v e V, u can reach v andvice versa.

Question No:163 (Marks:01) VU Malik

In in-place sorting algorithm is one that uses arrays for storage :

A. An additional array

B. No additional array

C. Both of above may be true according to algorithm

D. More than 3 arrays of one dimension.

Question No:164 (Marks:01) VU Malik

In stable sorting algorithm

A. One array is used

B. In which duplicating elements are not handled.

C. More than one arrays are required.

D. Duplicating elements remain in same relative position after sorting.

Question No:165 (Marks:01) VU Malik

Which sorting algorithm is faster :

A. O(n^2)

B. O(nlogn)

C. O(n+k)

D. O(n^3)

Question No:166 (Marks:01) VU Malik

In Quick sort algorithm, constants hidden in T(n lg n) are

A. Large

B. Medium

C. Not known

D. Small

Question No:167 (Marks:01) VU Malik

Quick sort is based on divide and conquer paradigm; we divide the problem on base ofpivot element and:

A. There is explicit combine process as well to conquer the solution.

B. No work is needed to combine the sub-arrays, the array is already sorted

C. Merging the sub arrays

D. None of the above

Question No:168 (Marks:01) VU Malik

Dijkstra's algorithm :

A. Has greedy approach to find all shortest paths
B. Has both greedy and Dynamic approach to find all shortest paths
C. Has greedy approach to compute single source shortest paths to all other vertices
D. Has both greedy and dynamic approach to compute single source shortest paths to all other vertices.

Question No:169 (Marks:01) VU Malik

Which may be stable sort:

A. Bubble sort
B. Insertion sort
C. Selection sort
D. Both of above

Question No:170 (Marks:01) VU Malik

In the analysis of Selection algorithm, we eliminate a constant fraction of the array with each phase; we get the convergent ___ series in the analysis,

A. linear
B. arithmetic
C. exponent
D. Geometric

Question No:171 (Marks:01) VU Malik

Which may be stable sort:

A. Bubble sort
B. Insertion sort
C. Selection sort
D. Both of above

Question No:172 (Marks:01) VU Malik

In the analysis of Selection algorithm, we eliminate a constant fraction of the array with each phase; we get the convergent ___ series in the analysis,

A. linear
B. arithmetic
C. exponent
D. Geometric

Question No:173 (Marks:01) VU Malik

How much time merge sort takes for an array of numbers?

A. T(n^2)

B. T(n)

C. T(log n)

D. T(n log n)

Question No:174 (Marks:01) VU Malik

We do sorting to,

A. keep elements in random positions

B. keep the algorithm run in linear order

C. keep the algorithm run in (log n) order

D. keep elements in increasing or decreasing order

Question No:175 (Marks:01) VU Malik

Dynamic programming algorithms need to store the results of intermediate sub-problems.

A. True

B. False

Question No:176 (Marks:01) VU Malik

Dijkstras single source shortest path algorithm works if all edges weightsare non negative and there are no negative cost cycles.

A. False

B. True

Question No:177 (Marks:01) VU Malik

Dijkestra s single source shortest path algorithm works if all edges weights arenegative and there are no negative cost cycles.

A. True

B. False

Question No:178 (Marks:01) VU Malik

In the clique cover problem, for two vertices to be in the same group, they must be____each other.

A. Apart from

B. Far from

C. Near to

D. Adjacent to

Question No:179 (Marks:01) VU Malik

Fixed-length codes may not be efficient from the perspective of_the total quantity of data.

A. Minimizing

B.Averaging

C. Maximizing

D. Summing

Question No:180 (Marks:01) VU Malik

In____based solution of knapsack problem, we consider 2 cases, Leaveobject Or Take object.

A. Brute force

B. Dynamic programming

Question No:181 (Marks:01) VU Malik

In brute force based solution of knapsack problem, we consider 2 cases, Leaveobject Or Take object.

A. TRUE

B. False

Question No:182 (Marks:01) VU Malik

_____problem, we want to find the best solution.

A. Minimization

B. Averaging

C. Optimization

D. Maximization

Question No:183 (Marks:01) VU Malik

Using ASCII standard the string abacdaacac will be encoded with 10 bytes.

A. True

B. False

Question No:184 (Marks:01) VU Malik

How many elements do we eliminate in each time for the Analysis of Selectionalgorithm?

A. (n / 2) + n elements

B. n / 4 elements

C. 2 n elements

D. n / 2 elements

Question No:185 (Marks:01) VU Malik

Slow sorting algorithms run in,

A. T(n^2)
B. T(n)
C. T(log n)
D. T(n log n)

Question No:186 (Marks:01) VU Malik

Counting sort is suitable to sort the elements in range 1 to k:

A. K is large
B. K is small
C. K may be large or small
D. None

Question No:187 (Marks:01) VU Malik

Heaps can be stored in arrays without using any pointers; this is due to the _____nature of the binary tree,

A. left-complete
B. right-complete
C. tree nodes
D. tree leaves

Question No:188 (Marks:01) VU Malik

A heap is a left-complete binary tree that conforms to the ____

A. increasing order only
B. heap order
C. decreasing order only
D. (log n) order

Question No:189 (Marks:01) VU Malik

Divide-and-conquer as breaking the problem into a small number of

A. pivot
B. Sieve
C. smaller sub problems
D. Selection

Question No:190 (Marks:01) VU Malik

In Sieve Technique we do not know which item is of interest

A. True
B. False

Question No:191 (Marks:01) VU Malik

The recurrence relation of Tower of Hanoi is given below T(n)={1 if n=1 and 2T(n-1) if n >1 In order to move a tower of 5 rings from one peg to another, how many ring moves are required?

A. 16
B. 10
C. 32
D. 31

Question No:192 (Marks:01) VU Malik

For the heap sort, access to nodes involves simple _____ operations.

A. arithmetic
B. binary
C. algebraic
D. logarithmic

Question No:193 (Marks:01) VU Malik

For the sieve technique we solve the problem,

A. recursively
B. mathematically
C. precisely
D. accurately

Question No:194 (Marks:01) VU Malik

The sieve technique works in_as follows

A. phases
B. numbers
C. integers
D. routines

Question No:195 (Marks:01) VU Malik

A (an)_____is a left-complete binary tree that conforms to the heaporder

A. heap
B. binary tree
C. binary search tree
D. array

Question No:196 (Marks:01) VU Malik

The sieve technique is a special case, where the number of sub problems is just

A. 5
B. Many
C. **1**
D. Few

Question No:197 (Marks:01) VU Malik

Analysis of Selection algorithm ends up with,

A. T(n)
B. T(1 / 1 + n)
C. T(n / 2)
D. T((n / 2) + n)

Question No:198 (Marks:01) VU Malik

For the heap sort we store the tree nodes in

A. level-order traversal
B. in-order traversal
C. pre-order traversal
D. post-order traversal

Question No:199 (Marks:01) VU Malik

The reason for introducing Sieve Technique algorithm is that it illustrates a very important special case of,

A. divide-and-conquer
B. decrease and conquer
C. greedy nature
D. 2-dimension Maxima

Question No:200 (Marks:01) VU Malik

Sieve Technique applies to problems where we are interested in finding a single item from a larger set of _____

A. n items
B. phases
C. pointers
D. constant

Question No:201 (Marks:01) VU Malik

Memorization is?

A. To store previous results for future use

B. To avoid this unnecessary repetitions by writing down the results of recursive calls andlooking them up again if we need them later

C. To make the process accurate

D. None of the above

Question No:202 (Marks:01) VU Malik

Quick sort is

A. Not stable but in place

B. Stable & in place

C. Stable but not in place

D. Some time stable & some times in place

Question No:203 (Marks:01) VU Malik

One example of in place but not stable algorithm is

A. Merger Sort

B. Quick Sort

B. Continuation Sort

C. Bubble Sort

Question No:204 (Marks:01) VU Malik

Continuation sort is suitable to sort the elements in range 1 to k

A. K is Large

B. K is not known

C. K may be small or large

D.K is small

Question No:205 (Marks:01) VU Malik

Which may be a stable sort?

A. Merger

B. Insertion

C. None of the above

D. Both above

Question No:206 (Marks:01) VU Malik

An in place sorting algorithm is one that uses____arrays for storage

A. Two dimensional arrays

B. More than one array

C. No Additional Array

D. None of the above

Question No:207 (Marks:01) VU Malik

Continuing sort has time complexity of ?

A. O(n)
B. O(n+k)
C. O(nlogn)
D. O(k)

Question No:208 (Marks:01) VU Malik

single item from a larger set of _____

A. phases
B. n items
C. pointers
D. constant

Question No:209 (Marks:01) VU Malik

For the Sieve Technique we take time

A. T(nk)
B. T(n / 3)
C. n^2
D. n/3

Question No:210 (Marks:01) VU Malik

Due to left complete nature of binary tree, the heap can be stored in

A. Arrays
B. Structures
C. Link List
D. Stack

Question No:211 (Marks:01) VU Malik

What type of instructions Random Access Machine (RAM) can execute?

A. Algebraic and logic
B. Geometric and arithmetic
C. Arithmetic and logic
D. Parallel and recursive

Question No:212 (Marks:01) VU Malik

What is the total time to heapify?

A. O(log n)
B. O(n log n)
C. $O(n^2 \log n)$
D. $O(\log^2 n)$

Question No:213 (Marks:01) VU Malik

word Algorithm comes from the name of the muslim author ___

A. Abu Ja'far Mohammad ibn Musa al-Khowarizmi.

Question No:214 (Marks:01) VU Malik

Al-Khwarizmi's work was written in a book titled _____

A. al Kitab al-mukhatasar fi hisab al-jabr wa'l-muqabalah

Question No:215 (Marks:01) VU Malik

Random access machine or RAM is a/an

A. Machine build by Al-Khwarizmi
B. Mechanical machine
C. Electronics machine
D. Mathematical model

Question No:216 (Marks:01) VU Malik

A RAM is an idealized machine with_ random-accessmemory.

A. 256MB
B. 512MB
C. 100GB
D. an infinitely large

Question No:217 (Marks:01) VU Malik

What will be the total number of max comparisons if we run brute-force maxima algorithm with n elements?

A. 2 n
B. 2 n n
C. **n**
D. 8 n

Question No:218 (Marks:01) VU Malik

Consider the following code:For(j=1; j<n;j++)
For(k=1; k<15;k++)
For(l=5; l<n; l++)
{
Do_something_constant();
}

What is the order of execution for this code.

A. O(*n*)
B. O(n^3)

C. O(n^2 log n)

D. O(n^2)

Question No:219 (Marks:01) VU Malik

Is it possible to sort without making comparisons?

A. Yes

B. No

Question No:220 (Marks:01) VU Malik

When we call heapify then at each level the comparison performed takes time

A. It will take Θ (1)

B. Time will vary according to the nature of input data

C. It can not be predicted

D. It will take Θ (log n)

Question No:221 (Marks:01) VU Malik

In Quick sort, we don't have the control over the sizes of recursive calls

A. True

B. False

C. Less information to decide

D. Either true or false

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Question No:222 (Marks:01) VU Malik

For Chain Matrix Multiplication we cannot use divide and conquer approach because,

A. We do not know the optimum k

B. We use divide and conquer for sorting only

C. We can easily perform it in linear time

D. Size of data is not given

Question No:223 (Marks:01) VU Malik

Suppose we have three items as shown in the following table, and suppose thecapacity of the knapsack is 50 i.e. W = 50.

Item	Value	Weight
1	60	10
2	100	20
3	120	30

The optimal solution is to pick

A. Items 1 and 2

B. Items 1 and 3
C. Items 2 and 3
D. None of these

Question No:224 (Marks:01) VU Malik
who invented the quick sort
A. C.A.R. Hoare

Question No:225 (Marks:01) VU Malik
main elements to a divide-and-conquer
A. Divide, conquer, combine

Question No:226 (Marks:01) VU Malik
Mergesort is a stable algorithm but not an in-place algorithm.
A. True
B. False

Question No:227 (Marks:01) VU Malik
Counting sort the numbers to be sorted are in the range 1 to k where k is small.
A. True
B. False

Question No:228 (Marks:01) VU Malik
In selection algorithm, because we eliminate a constant fraction of the array with each phase, we get the
A. Convergent geometric series
B. Divergent geometric series
C. None of these

Question No:229 (Marks:01) VU Malik
In RAM model instructions are executed
A. One after another
B. Parallel

Question No:230 (Marks:01) VU Malik
Due to left-complete nature of binary tree, heaps can be stored in
A. Link list
B. Structure
C. Array
D. None of above

Question No:231 (Marks:01) VU Malik

The time assumed for each basic operation to execute on RAM model of computation is-----

A. Constant
B. Infinite
C. Continuous
D. Variable

Question No:232 (Marks:01) VU Malik

If the indices passed to merge sort algorithm are not equal, the algorithm may return immediately.

A. True
B. False

Question No:233 (Marks:01) VU Malik

Brute-force algorithm uses no intelligence in pruning out decisions.

A. True
B. False

Question No:234 (Marks:01) VU Malik

In analysis, the Upper Bound means the function grows asymptotically no faster than its largest term.

A. True
B. False

Question No:235 (Marks:01) VU Malik

For small values of n, any algorithm is fast enough. Running time does become an issue when n gets large

A. True .
B. False

Question No:236 (Marks:01) VU Malik

In simple brute-force algorithm, we give no thought to efficiency.

A. True
B. False

Question No:237 (Marks:01) VU Malik

The ancient Roman politicians understood an important principle of good algorithm design that is plan-sweep algorithm.

A. True
B. False

Question No:238 (Marks:01) VU Malik

If the indices passed to merge sort algorithm are_,then this means thatthere is only one element to sort.

A. Small
B. Large
C. Equal
D. Not Equal

Question No:239 (Marks:01) VU Malik

In pseudo code, the level of details depends on intended audience of the algorithm.

A. True
B. False

Question No:240 (Marks:01) VU Malik

In 2d-space a point is said to be_____if it is not dominated by any other point in that space.

A. Member
B. Minimal
C. Maximal
D. Joint

Question No:241 (Marks:01) VU Malik

An algorithm is a mathematical entity that is dependent on a specific programming language.

A. True
B. False

Question No:242 (Marks:01) VU Malik

The running time of an algorithm would not depend upon the optimization bythe compiler but that of an implementation of the algorithm would depend on it.

A. TRUE
B. False

Question No:243 (Marks:01) VU Malik

F (n) and g (n) are asymptotically equivalent. This means that they have essentially the same_____ for large n.

A. Results
B. Variables
C. Growth rates

D. Size

Question No:244 (Marks:01) VU Malik

8n2 + 2n - 3 will eventually exceed c2*(n) no matter how large we make c2.

A. TRUE

B. False

Question No:245 (Marks:01) VU Malik

If we associate (x, y) integers pair to cars where x is the speed of the car and yis the negation of the price. High y value for a car means a_car.

A. Fast

B. Slow

C. Cheap

D. Expensive

Question No:246 (Marks:01) VU Malik

While solving Selection problem, in Sieve technique we partition input data

A. In increasing order

B. In decreasing order

C. According to Pivot

D. Randomly

Question No:247 (Marks:01) VU Malik

In Sieve Technique, we know the item of interest.

A. True

B. False

Question No:248 (Marks:01) VU Malik

In Heap Sort algorithm, we build_____for ascending sort.

A. Max heap

B. Min heap

Question No:249 (Marks:01) VU Malik

Quick sort is best from the perspective of Locality of reference.

A. True

B. False

Question No:250 (Marks:01) VU Malik

While Sorting, the ordered domain means for any two input elements x and y _____satisfies only.

A. x < y

B. x > y

C. x = y
D. All of the above

Question No:251 (Marks:01) VU Malik
Algorithm is a mathematical entity, which is independent of a specificmachine and operating system.
A. True
B. False

Question No:252 (Marks:01) VU Malik
In Heap Sort algorithm, the total running time for Heapify procedure is
A. Theta (log n)
B. Order (log n)
C. Omega (log n)
D. O (1)

Question No:253 (Marks:01) VU Malik
A point p in 2-dimensional space is usually given by its integercoordinate(s) _
A. p.x only p.y
B. only p.x & p.z
C. p.x & p.y

Question No:254 (Marks:01) VU Malik
In Heap Sort algorithm, the maximum levels an element can move upward is
A. Theta (log n)
B. Order (log n)
C. Omega (log n)
D. O

Question No:255 (Marks:01) VU Malik
Floor and ceiling are____to calculate while analyzing algorithms.
A. Very easy
B. Usually considered difficult

Question No:256 (Marks:01) VU Malik
_____is one of the few problems, where provable lower bounds exist onhow fast we can sort.
A. Searching
B. Sorting
C. Both Searching & Sorting
D. Graphing

Question No:257 (Marks:01) VU Malik

A RAM is an idealized algorithm with takes an infinitely large random-access memory.

A. True
B. False

Question No:258 (Marks:01) VU Malik

Upper bound requires that there exist positive constants c2 and n0 such thatf(n) _____c2n for all n <= n0(ye question ghalat lag raha hai mujhae

A. Less than
B. Equal to or Less than
C. Equal or Greater than
D. Greater than

Question No:259 (Marks:01) VU Malik

In Heap Sort algorithm, if heap property is violated _____

A. We call Build heap procedure
B. We call Heapify procedure
C. We ignore
D. Heap property can never be violated

Question No:260 (Marks:01) VU Malik

In___we have to find rank of an element from given input.

A. Merge sort algorithm
B. Selection problem
C. Brute force technique
D. Plane Sweep algorithm

Question No:261 (Marks:01) VU Malik

A point p in 2-dimensional space is usually given by its integercoordinate(s) _

A. p.x only
B. p.y only
C. p.x & p.z
D. p.x & p.y

Question No:262 (Marks:01) VU Malik

In Quick Sort Constants hidden in T(n log n) are

A. Large
B. Medium
C. Small
D. Not Known

Question No:263 (Marks:01) VU Malik

The running time of quick sort depends heavily on the selection of

A. No of inputs
B. Arrangement of elements in array
C. Size o elements
D. Pivot elements

Question No:264 (Marks:01) VU Malik

Choose one Counting sort has timecomplexity:

A. O(n) (Page 58)
B. O(n+k)
C. O(k)
D. O(nlogn)

Question No:265 (Marks:01) VU Malik

In place stable sorting algorithm.

A. If duplicate elements remain in the same relative position after sorting
B. One array is used
C. More than one arrays are required
D. Duplicating elements not handled

Question No:266 (Marks:01) VU Malik

Cont sort is suitable to sort the elements in range 1 to k

A. K is Large
B. K is not known
C. K may be small or large
D. K is small

Question No:267 (Marks:01) VU Malik

The sieve technique works where we have to find_item(s) from alarge input.

A. Single
B. Two
C. Three
D. Similar

Question No:268 (Marks:01) VU Malik

A RAM is an idealized machine with_random-accessmemory.

A. 256MB
B. 512MB
C. an infinitely large

D. 100GB

Question No:269 (Marks:01) VU Malik

A RAM is an idealized machine with_random-accessmemory.

A. 256MB
B. 512MB
C. an infinitely large
D. 100GB

Question No:270 (Marks:01) VU Malik

For the sieve technique we solve the problem,

A. recursively
B. mathematically
C. precisely
D. accurately

Question No:271 (Marks:01) VU Malik

number of nodes in a complete binary tree of height h is

A. 2^(h+1) – 1
B. 2 * (h+1) – 1
C. 2 * (h+1)
D. ((h+1) ^ 2) – 1 25

Question No:272 (Marks:01) VU Malik

Heaps can be stored in arrays without using any pointers; this is due to the _____nature of the binary tree,

A. left-complete
B. right-complete
C. tree nodes
D. tree leaves

Question No:273 (Marks:01) VU Malik

Sorting is one of the few problems where provable_bonds exits onhow fast we can sort,

A. upper
B. lower
C. average
D. log n

Question No:274 (Marks:01) VU Malik

The analysis of Selection algorithm shows the total running time is indeed _____in no

A. arithmetic
B. geometric
C. linear
D. orthogonal

Question No:275 (Marks:01) VU Malik

What algorithm technique is used in the implementation of Kruskal solution for the MST?

A. Greedy Technique
B. Divide-and-Conquer Technique
C. Dynamic Programming Technique
D. The algorithm combines more than one of the above techniques

Question No:276 (Marks:01) VU Malik

one If you find yourself in maze the better traversal approach will be :

A. BFS
B. BFS and DFS both are valid
C. Level order
D. DFS

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Question No:277 (Marks:01) VU Malik

In digraph G=(V,E) ;G has cycle if and only if

A. The DFS forest has forward edge.
B. The DFS forest has back edge (Page 131)
C. The DFS forest has both back and forward edge
D. BFS forest has forward edge

Question No:278 (Marks:01) VU Malik

Suppose that a graph G = (V,E) is implemented using adjacency lists. What isthe complexity of a breadth-first traversal of G?

A. O(|V |^2)
B. O(|V | |E|)
C. O(|V |^2|E|)
D. O(|V | + |E|)

Question No:279 (Marks:01) VU Malik

There are___nested loops in DP based algorithm for computing theminimum cost of chain matrix multiplication.

A. 2
B. **3**
C. 4
D. 5

Question No:280 (Marks:01) VU Malik

Counting Money problem is an example which cannot be optimally solved by greedy algorithm.

A. True
B. False

Question No:281 (Marks:01) VU Malik

Who invented Quick sort procedure?

A. Hoare
B. Sedgewick
C. Mellroy
D. Coreman

Question No:282 (Marks:01) VU Malik

An activity scheduling algorithm, the width of a rectangle--.

A. Is always ignored
B. Direct toward recursion
C. Should be maximized
D. Indicates the duration of an activity

Question No:283 (Marks:01) VU Malik

In recursive formulationof Knapsack Problem: V[0, j] = for j>=0

A. -1
B. 0
C. 1
D. 2

Question No:284 (Marks:01) VU Malik

The Probability in Huffman encoding is the number of occurrences of a character divided by the total----------in the message.

A. Numbers
B. Frequencies
C. Strings
D. Characters

Question No:285 (Marks:01) VU Malik

Graphs can be represented by an---------- and --.

A. queue , stack

B. **adjacency list , adjacency matrix**

C.adjacency right , adjacency left

D.Binary , linear

Question No:286 (Marks:01) VU Malik

Edge weights can be interpreted as distance_.

A. in breadth-First Search

B. in Queue's

C. in the shortest-paths

D. in depth-First Search

Question No:287 (Marks:01) VU Malik

_____algorithm allows negative weights edges and no negative costcycles.

A. Brute-force technique

B. Bellman-Ford

C. Dijkstra's

D. Print

Question No:288 (Marks:01) VU Malik

According to parenthesis lemma vertex u is a descendent of v vertex if and only if:

A. f [d[u], f[u]] ⊆ [d[v], f[v]] (Page 129)

Question No:289 (Marks:01) VU Malik

There exist a unique path between any_____vertices of a free tree.

A. Two

Question No:290 (Marks:01) VU Malik

Keeping in mind the shortest-path, if given scenarios occur in computer networks like the internet where data packets have to be routed. The vertices are_____and Edges are_____which may be wired or wireless.

A. Routers, communication links

Question No:291 (Marks:01) VU Malik

In undirected graph, by convention all the edges are called_____edges.

A. back

Question No:292 (Marks:01) VU Malik

Bellman-Ford algorithm is slower than_____.

A. Dijkstra's

Question No:293 (Marks:01) VU Malik

From the given option's which one is correct regarding the time complexity of Dijkstra's algorithm:

A. O(N^2)

Question No:294 (Marks:01) VU Malik

In the shortest-paths problem, we are given a weighted of_____G = (V, E).

A. Un-directed graph

Question No:295 (Marks:01) VU Malik

You have an adjacency list for G, what is the time complexity to compute Graph transpose G^T ?

A. (V+E)

Question No:296 (Marks:01) VU Malik

If you find yourself in maze the better traversel approach will be :

A. BFS

B. BFS and DFS both are valid

C. Level order

D. DFS

Question No:297 (Marks:01) VU Malik

In strong components algorithm, first of all DFS is run for computing finish times of vertices.

A. [d[u], f[u]]⊆[d[v], f[v]]

B. [d[u], f[u]]⊇[d[v], f[v]]

C. **unrelated**

D. Disjoint

Question No:298 (Marks:01) VU Malik

The relationship between number of back edges and number of cycles in DFS is,

A. Both are equal

B. Back edges are half of cycles

C. Back edges are one quarter of cycles

D. There is no relationship between no. of edges and cycles

Question No:299 (Marks:01) VU Malik

What general property of the list indicates that the graph has an isolated vertex?

A. There is Null pointer at the end of list.
B. The Isolated vertex is not handled in list.
C. Only one value is entered in the list.
D. There is at least one null list.

Question No:300 (Marks:01) VU Malik

As the Kruskal's runs, the edges in viable set A induce a_____on the vertices.

A. Set
B. Graph
C. Tree
D. Fore