

Question No : 1 of 26

Marks: 1 (Budgeted Time 1 Min)

Unlike programs, algorithms to be understood primarily by _____ and _____

Answer (Please select your correct option)

Machines, not people

Mathematical expressions, not algebraic expressions

Programmers, not machines

RAM, not programmer

correct answer solve
by hadi

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Question No : 2 of 26

Marks: 1 (Budgeted Time 1 Min)

Recurrences are useful for analyzing

Answer (Please select your correct option)

- Recursive Algorithms
- Simple Algorithms
- Parallel Algorithms
- Parallel Algorithms & Recursive Algorithms

correct answer solve
by hadi

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Question No : 3 of 26

Marks: 1 (Budgeted Time 1 Min)

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

Answer (Please select your correct option)

pivot

Sub problems

correct answer solve
by hadi

Selection

Sieve

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Question No : 4 of 26

Marks: 1 (Budgeted Time 1 Min)

In which order we can sort?

Answer (Please select your correct option)

increasing order or decreasing order

correct answer solve
by hadi

both at the same time

increasing order only

decreasing order only

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Question No : 5 of 26

Marks: 1 (Budgeted Time 1 Min)

Comparison based sorting algorithms can not run faster than

Answer (Please select your correct option)

$\Omega (n \log n)$

correct answer solve
by hadi

$O (n \log n)$

$\Omega (n^2)$

$O (n^2)$

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Question No : 6 of 26

Marks: 1 (Budgeted Time 1 Min)

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

Answer (Please select your correct option)

- True correct answer solve
by hadi
- False
- Less information to decide
- Either true or false

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Question No : 7 of 26

Marks: 1 (Budgeted Time 1 Min)

Who invented Quick sort procedure?

Answer (Please select your correct option)

- Hoare correct answer solve
by hadi
- Sedgewick
- Mellroy
- Coreman

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Question No : 8 of 26

Marks: 1 (Budgeted Time 1 Min)

Counting sort assumes that the numbers to be sorted are in the range 1 to k, where k is

Answer (Please select your correct option)

Small

correct answer solve
by hadi

Large

No restriction on k

None of these

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Question No : 9 of 26

Marks: 1 (Budgeted Time 1 Min)

If there are $\Theta(n^2)$ entries in edit distance matrix then the total running time is

Answer (Please select your correct option)

$\Theta(1)$

$\Theta(n^2)$

correct answer solve
by hadi

$\Theta(n)$

$\Theta(n \log n)$

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Question No : 10 of 26

Marks: 1 (Budgeted Time 1 Min)

When a recursive algorithm revisits the same problem over and over again, we say that the optimization problem has _____ sub-problems.

Answer (Please select your correct option)

Overlapping

Over costing

Optimized

None of these

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Question No : 11 of 26

Marks: 1 (Budgeted Time 1 Min)

A $p \times q$ matrix A can be multiplied with a $q \times r$ matrix B. The result will be a $p \times r$ matrix C. In particular, for $1 \leq i \leq p$ and $1 \leq j \leq r$,

Answer (Please select your correct option)

$C[i, j] = \sum_{k=1}^q A[i, k]B[k, j]$ ✓

$C[i, j] = \sum_{k=1}^q A[k, i]B[k, j]$

$C[i, j] = \sum_{k=1}^q A[k, i]B[j, k]$

None of these

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Question No : 12 of 26

Marks: 1 (Budgeted Time 1 Min)

We can find the product $A \times B$ of matrices A and B, only if they are compatible which means,

Answer (Please select your correct option)

No of Columns of A must be equal to No of Rows of B

No of Columns of A must be equal to No of Columns of B

No of Rows of A must be equal to No of Rows of B

Order of A must be equal to order of B

correct answer solve
by hadi

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Question No : 13 of 26

Marks: 1 (Budgeted Time 1 Min)

Time complexity of chain matrix multiplication is $\Theta(n^3)$ and space complexity is

Answer (Please select your correct option)

$\Theta(n^2)$

correct answer solve
by hadi

$\Theta(n^3)$

$\Theta(n \log n)$

$\Theta(\log n)$

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Question No : 14 of 26

Marks: 1 (Budgeted Time 1 Min)

Computational model of sequential RAM is:

Answer (Please select your correct option)

- Parallel machines may be expensive to model and have more computational power than sequential RAM.
- Computational power of sequential RAM is same as that of parallel machines only time efficiency is achieved with parallel machines
- Both first and second options are true for the statement
- Less powerful computational wise than parallel machines

correct answer solve
by hadi

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Question No : 15 of 26

Marks: 1 (Budgeted Time 1 Min)

The worst case running time of the algorithm given below is,

```
MAXIMA(int n, Point P[1...n])
1  for i ← 1 to n
2  do maximal ← true
```

Answer (Please select your correct option)

$\Theta(n^6)$

$\Theta\left(\frac{2n}{n^6}\right)$

$\Theta(n^2)$

correct answer solve
by hadi

$\Theta(2n \lg 6)$

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Question No : 15 of 26

Marks: 1 (Budgeted Time 1 Min)

```
1 for i ← 1 to n
2 do maximal ← true
3   for j ← 1 to n
4     do
5       if (i ≠ j) & (P[i].x < P[j].x) & (P[i].u < P[j].u)
```

Answer (Please select your correct option)

$\Theta(n^6)$

$\Theta\left(\frac{2n}{n^6}\right)$

$\Theta(n^2)$

correct answer solve
by hadi

$\Theta(2n \lg 6)$

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Question No : 15 of 26

Marks: 1 (Budgeted Time 1 Min)

```
3 for j ← 1 to n n times
4 do
5   if (i ≠ j) & (P[i].x ≤ P[j].x) & (P[i].y ≤ P[j].y) 2 accesses
6     then maximal ← false break
7 if maximal
```

Answer (Please select your correct option)

$\Theta(n^6)$

$\Theta\left(\frac{2n}{n^6}\right)$

$\Theta(n^2)$

correct answer solve
by hadi

$\Theta(2n \lg 6)$

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Question No : 15 of 26

Marks: 1 (Budgeted Time 1 Min)

```
5   if (i ≠ j) & (P[i].x ≤ P[j].x) & (P[i].y ≤ P[j].y) 4 accesses
6   then maximal ← false break
7   if maximal
8   then output P[i].x, P[i].y 2 accesses
```

Answer (Please select your correct option)

$\Theta(n^6)$

$\Theta\left(\frac{2n}{n^6}\right)$

$\Theta(n^2)$

correct answer solve
by hadi

$\Theta(2n \lg 6)$

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Question No : 16 of 26

Marks: 1 (Budgeted Time 1 Min)

In Sieve Technique, we know _____

Answer (Please select your correct option)

- Item of ineterst
- Order of items
- complexity of items
- All items are of ineterst

correct answer solve
by hadi

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Question No : 17 of 26

Marks: 1 (Budgeted Time 1 Min)

In Random access machine, instructions are executed _____.

Answer (Please select your correct option)

five at a time

infinite instructions at a time

one-by-one

parallel

correct answer solve
by hadi

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Question No : 18 of 26

Marks: 1 (Budgeted Time 1 Min)

Which type of instructions Random Access Machine (RAM) can execute? Choose best answer

Answer (Please select your correct option)

Algebraic and logic

Geometric and arithmetic

Arithmetic and logic

Parallel and recursive

correct answer solve
by hadi

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Question No : 19 of 26

Marks: 1 (Budgeted Time 1 Min)

Which of the following is calculated with **Big O notation**?

Answer (Please select your correct option)

- Medium bounds
- Lower bounds
- Upper bounds
- Both upper and lower bound

correct answer solve
by hadi

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Question No : 20 of 26

Marks: 1 (Budgeted Time 1 Min)

Which of the following functions grows fastest as n gets larger?

Answer (Please select your correct option)

$n^{10}2^n$

$n^8 2^n$

$n^5 5^n$

$n^3 2^{2n}$

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Question No : 21 of 26

Marks: 2 (Budgeted Time 4 Min)

What is the essential constraint for the Counting Sort?

Answer ([Please click here to Add Answer](#))

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Question No : 22 of 26

Marks: 2 (Budgeted Time 4 Min)

How we proceed with m entries in cost table for chain matrix multiplication problem?

Answer ([Please click here to Add Answer](#))

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Question No : 23 of 26

Marks: 3 (Budgeted Time 6 Min)

Solve it,

$$T(n) = \frac{1}{2} \sum_{q=1}^2 (T(q-1) + T(2-q) + 2)$$

Answer ([Please click here to Add Answer](#))



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Question No : 24 of 26

Marks: 3 (Budgeted Time 6 Min)

True or False: A sequence of values in a row of the dynamic programming table for an instance of the knapsack problem is always non-decreasing. Give a brief description.

Answer (Please [click here](#) to Add Answer)

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Question No : 25 of 26

Marks: 5 (Budgeted Time 10 Min)

Whether each of the following sorting algorithms is stable and in-place or not?

Sorting Algorithm	Stable	In-Place
Merge Sort	Yes/No	Yes/No
Heapsort	Yes/No	Yes/No
Quicksort	Yes/No	Yes/No
Counting Sort	Yes/No	Yes/No

Answer (Please [click here to Add Answer](#))

Rich text editor toolbar with icons for undo, redo, bold, italic, underline, link, unlink, list, and other formatting options. The font is set to Arial, size 12, and the zoom level is 100%.

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Question No : 25 of 26

Marks: 5 (Budgeted Time 10 Min)

Merge Sort	Yes/No	Yes/No
Heapsort	Yes/No	Yes/No
Quicksort	Yes/No	Yes/No
Counting Sort	Yes/No	Yes/No
Bubble Sort	Yes/No	Yes/No

Answer ([Please click here to Add Answer](#))



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Question No : 26 of 26

Marks: 5 (Budgeted Time 10 Min)

Write down the steps of dynamic programming strategy.

Answer ([Please click here to Add Answer](#))

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