Review Test Submission: Week 03 Quiz

User	Dong Gao
Subject	Algorithms and Complexity
Test	Week 03 Quiz
Started	16/03/16 9:25 PM
Submitted	16/03/16 9:27 PM
Due Date	24/03/16 11:59 PM
Status	Completed
Attempt Score	5 out of 5 points
Time Elapsed	1 minute
Instructions	You should attempt the quiz after the lecture and your tutorial

- The quiz is available for a period of 10 days.
- You may attempt the quiz multiple times (if you happen to get a question wrong, you can do it again)
- Your score on the quiz will be recorded in the grade book. The score is not used when determining your final mark in this subject
- The quiz might not display equations correctly in some browsers. If you experience problems, we recommend that you use Firefox.

Note: you must complete at least eight of the weekly quizzes to meet one of the hurdle requirements in this subject

Results Displayed	All Answers, Submitted Answers, Correct Answers, Feedback

Question 1

1 out of 1 points

One of my books has 589 pages, numbered consecutively. Every page has a page number, the first being 1. How many decimal digits were used to type the 589 page numbers?

Selected Answer: ✔ e. 1659

Answers:

a. 1661

b. 1657

c. 1660

d. 1667

e. 1659

Response Feedback: Right - there are 9 page numbers of length 1, 90 of length 2, and 490 of length 3.

Question 2

1 out of 1 points

This function uses a curious mix of iteration and recursion:

```
function F(n)
    if n < 1
        return 1
    t <- 0
    for i <- 0 to n
        for j <- i to n
            t <- t + j
    return t + F(n-1)
```

The number of basic operations (additions and subtractions) performed is:

Selected Answer: $\Theta(n^3)$

e.

Answers:

a. $\Theta(n^2)$

b. $\Theta(n^2 \log n)$

c. $\Theta(n^4)$

d. $\Theta(n)$

e. $\Theta(n^3)$

Response Feedback: Well done.

Question 3

1 out of 1 points

In Lecture 5 we discussed the brute-force approach to string search. How many character comparisons will the algorithm make when searching for 'lido' in the string

'supercalifragilisticexpialidocious' ?

Selected Answer: 33

Correct Answer: 33

Answer range +/- 0 (33.0 - 33.0)

Response Feedback: That's right - well done.

Question 4

1 out of 1 points

In Lecture 6 we gave a recursive algorithm for solving the Tower of Hanoi puzzle. Assume we have a tower of 24 disks to move, and each move (moving one disk from one peg to another) takes one minute. The total time taken will be:

Selected Answer: a. Approximately 32 years

Answers:

a. Approximately 32 years

b. Approximately one year

c. Approximately six days

d. Approximately two months

e. Approximately ten years

Response Feedback: Yes, that's correct. The original puzzle, by Edouard Lucas, asked how long it would take to move 64 disks, not 24. Now try to estimate that. Hint: It will take longer than the estimated age of the universe!

Question 5

1 out of 1 points

Consider this instance of the Assignment Problem (introduced in tutorial exercise 22).

	Job 1	Job 2	Job 3	Job 4
Contractor 1	13	16	12	11
Contractor 2	15	17	12	12
Contractor 3	14	14	13	13
Contractor 4	13	10	10	11

Match each contractor to a job so as to minimise the cost.

Question	Correct Match	Selected Match
Contractor 1	a. Job 4	a. Job 4
Contractor 2	b. Job 3	b. Job 3

Contractor 3	c. Job 1	c. Job 1
Contractor 4	d. Job 2	d. Job 2

All Answer Choices

a. Job 4

b. Job 3

c. Job 1

d. Job 2

Response Feedback: Yes, that's right.

Saturday, 4 June 2016 11:13:22 PM EST

← OK