Purdue University
CS 182

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Quiz 2 Version A Model Solution

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The quiz has 2+10 questions to bubble in.
Keep the question sheet for your records.

1. I have spelled out and bubbled in correctly my first name, last name, and Purdue ID.

   A True

   B False

2. Your version of the quiz is Version A. Bubble in the version below. If you do not bubble in the version, your quiz score will be 0/10.

   A Version A

   B Version B

3. When rolling two dice and i represents the number from the first die and j represents the number from the second die, the variance of the random variable x(i,j) = i+j is:

   A 1/6

   B 5.83

   C 2.92

   D 3.5

   Solution : B

4. The recurrence relation representing Towers of Hanoi is

   A $H_n = H_{n-1} + H_{n-2}$

   B $H_n = H_{n-1} + 1$

   C $H_n = nH_{n-1} + 1$

   D None of the above

   Solution : D

5. Is $a_n = 4a_{n-2} + 9a_{n-4}$ a LHRRCC?

   A True

   B False

   Solution : A

6. Is $a_n = (a_{n-2})^2 + na_{n-4} + 1$ a LHRRCC?

   A True

   B False

   Solution : B

7. A fruit bowl has apples, oranges, and pears. How many ways are there to select 5 pieces of fruit?. There are many pieces of fruits of each type in the bowl and the order of retrieved fruits does not matter.

   A 15

   B 21

   C 30

   D 5!

   E None of the above

   Solution : B

8. How many different strings can be made by reordering the letters of the word SUCCEESS?

   A 1680

   B 3360

   C 6720

   D 40320

   E None of the above

   Solution : A

9. What is the coefficient of $x^{13}y^{15}$ in the expansion of $(2x - 3y)^{25}$?

   A $c(25, 15)$

   B $c(25, 13)$

   C $c(25, 15)(2)^{15}(-3)^{(13)}$

   D None of the above

   Solution : D

   Which of the following statements are correct? A is True and B is False.

10. A Turing machine can perform sorting

    Solution : True

11. Among 100 people there are at least 20 who were born in the same month.
    Solution : False

12. 5! is the number of permutations of 5 playing cards selected at random from a deck of 52 cards.
    Solution : False