Week 6 Assignment

The due date for submitting this assignment has passed.

Due on 2021-03-03, 23:59 IST.

As per our records you have not submitted this assignment.

1) How many different arrangements are there of the letters in the word ALGEBRA? *1 point*

- 5040
- 2520
- 1260
- 3780

No, the answer is incorrect.
Score: 0

Accepted Answers:
2520

2) Choose the correct option(s) assuming that a year has exactly 365 days i.e., ignoring leap years. *1 point*

- At least 2 among a group of 366 people will be born on the same day of the year
- At least 3 among a group of 1096 people will be born on March 4
- At least 2 among a group of 53 people will be born exactly 1 week apart
- At least 3 among a group of 15 people will be born on the same day of the week

No, the answer is incorrect.
Score: 0

Accepted Answers:
At least 2 among a group of 366 people will be born on the same day of the year
At least 3 among a group of 15 people will be born on the same day of the week

3) A bag contains 4 Blue marbles, 4 Green marbles and 4 Yellow marbles. What is the minimum number of marbles that needs to be picked randomly such that we are ensured to get 3 marbles of same color? *1 point*

- 3
- 6
- 7
- 12

No, the answer is incorrect.
Score: 0

Accepted Answers:
7

4) The number of integer solutions of $x_1 + x_2 + x_3 + x_4 = 32$, such that $x_1, x_3 \geq 5$ and $x_2, x_4 \geq 7$: *1 point*

- 165
- 900
- 1000
- 1900

No, the answer is incorrect.
Score: 0

Accepted Answers:
165

5) In a class of 8 boys and 4 girls, how many groups of 4 boys and 2 girls can be formed? *1 point*

- $^{12}C_6$
- $^{32}C_8$
- $\frac{8!}{2!}$
- None of the given options

No, the answer is incorrect.
Score: 0

Accepted Answers:
None of the given options

6) A digital board displays a 6-digit number at random where each digit is from 0-9. How many possible values can the board display such that no two consecutive digits are equal? *1 point*

- 10000000
- 729000
- 590490
- 151200

No, the answer is incorrect.
Score: 0

Accepted Answers:
590490

7) Consider the following statements: *1 point*

I. Given a set of 19 distinct integers, the set contains two integers a and b such that $|a-b|=9 \cdot q$ where $q \geq 1$.
II. Choose a subset of d numbers from the given set A={1,2,…,2d} of 2d consecutive numbers. The chosen subset always contains a pair of numbers which has no factors (other than 1) in common.

Choose the correct option(s) from the following.

- I) is true and (II) is false
- (I) is false and (II) is true
- Both (I) and (II) are true
- Both (I) and (II) are false

No, the answer is incorrect.
Score: 0

Accepted Answers:
I) is true and (II) is false

8) A K X K chess board is to be colored using black (B), white (W) and red (R) colors such that any possible coloring of the given board always has a row and a column with a minimum of 3-unit squares of same color. Which of the following is (are) true about the given problem? *1 point*

- The given condition may not be satisfied when K=5
- The given condition may not be satisfied when K=6
- The given condition will be satisfied when K=8
- The given condition will be satisfied when K=7

No, the answer is incorrect.
Score: 0

Accepted Answers:
The given condition may not be satisfied when K=5
The given condition may not be satisfied when K=6
The given condition will be satisfied when K=8
The given condition will be satisfied when K=7

9) In how many ways can a 2 ×n rectangular checkerboard be tiled using 1 ×2 and 2 ×2 pieces: *1 point*

- $\frac{2^{n+1}}{3} + \frac{(-1)^n}{3}$
- $C(n,2) + C(n,1)$
- $\frac{2^{n+1}}{3} + \frac{(-1)^{n+1}}{3}$
- $C(n,2) - C(n,1)$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$\frac{2^{n+1}}{3} + \frac{(-1)^n}{3}$

10) Consider a sequence of n ≥2 indistinguishable items, such that m of them are defective and the remaining n-m are functional. Assume n ≥3m -2. What is the number of sequences where each pair of defective item is separated by at least 2 functional items. *1 point*

- C(n-2m+2,m)
- C(n-m+1,m)
- C(n-m+1,n-3m)
- None of the given options

No, the answer is incorrect.
Score: 0

Accepted Answers:
C(n-2m+2,m)