

# Quiz 1

Q1: Let  $A = \{3, 2, 5, 6, 7, 10, 4\}$ . The total number of subsets of  $A$  are:

- a. 7                      b. 8                      c. 128                      d. 256

Q2: How many ways to divide 10 apples into 4 children's, such that the youngest has at least 3, and the oldest has at most 2 apples?

- a. 85                      b. 39                      c. 64                      d. 75

Q3: How many binary strings of length 8 have exactly two 0 bits:

- a.  $2^6$                       b.  $2^5$                       c. 28                      d.  $2^8 - 2^6$

Q4: How many 5 digits number in which the first digit is odd or the last digit is even?

- a. 60000                      b. 70000                      c. 85000                      d. 95000

Q5: There are 4 kind of money: 10000đ, 20000đ, 50000đ, 100000đ. How many ways are there to select 10 items?.

- a.  $4 * 10$                       b.  $4^{10}$                       c.  $10^4$                       d. Other:.....

**Q6:** How many people must be selected to guarantee that at least 5 peoples are holding the same zodiac.

- a. 5                      b. 49                      c. 60                      d. 13

**Q7** How many solutions does the equation  $x + y + z + t = 25$  have, where  $x, y, z$ , and  $t$  are nonnegative integers and  $x > 7$ ,  $y < 5$  and  $z > 9$ :

- a. 75                      b. 90                      c. 110                      d. 155

**Q8: Prove that**       $(p \rightarrow q) \rightarrow r \Leftrightarrow (\bar{p} \rightarrow r) \wedge (q \rightarrow r)$

**Q9:** Is the following inference, correct?

If An did well on his exams and finished his housework, his parents would let him go to the cinema tonight. If he goes for the movies, he will definitely come home late. Coming home late will make him go to school late tomorrow. If An coming late, the teacher will not allow him get into his class. But An doesn't want to be late for school. Conclusion An did not take the exam well or his parents did not let him go to the cinema.

----- Good luck to you!-----