國立澎湖科技大學
一百學年度研究所入學考試試題

科目：離散數學

祝考試順利

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1. How many subsets of the set {1, 3, 4, 6, 9}?   (15%)

2. Compute the Fibonacci numbers F_3 to F_5 ($F_1=1$, $F_2=1$, $F_n=F_{n-1}+F_{n-2}$). (15%)

3. Construct a truth table for each compound statement in $(p \vee q) \wedge [\sim(p \wedge q)]$. (15%)

4. Compute the set in $A \cap (\overline{B} \cup C)$ if $A=\{1,2,3,4\}$, $B=\{1,4,5\}$ and universal set is $U=\{1,2,3,4,5,6\}$.   (15%)

5. If 4 coins are tossed, what is the probability that all of them land with the same side up? (15%)

6. Prove by mathematical induction that any list of 2^n numbers can be sorted into non-decreasing order with the use of at most $n2^n$ comparisons. (25%)