1. What are the major differences between discrete data and continuous data? (10%)
2. Explain the definitions of: Mean, Median and Mode, and then give an example for each. (15%)
3. In a plant specimens example, a preliminary experiment involved $n=3$ plant specimens. Suppose that the probability of any individual specimen having fungus at the end of the experiment is $p=0.2$. What is the binomial probability distribution for $P(X=1)$. (15%)
4. 若要研究某一藥材之療效，抽樣 12 名病患實驗，得有明顯療效時間分別為 15, 23, 32, 18, 22, 41, 29, 25, 27, 30, 18，試求此藥材有明顯療效時間之 95% 信賴區間。 (15%) \( t_{0.05}=2.201 \)
5. 自 500 個學生中選出 100 位來，假設學生有抽煙之比例為 $p=0.03$，試求 $P \leq 0.05$ 之機率。 (15%) (本題只需列出式子)
6. 流量校正時其浮子讀數及相對流量之數對分別為：(162,0.79), (250,1.0), (322,1.25), (380,1.42), (435,1.58)，試求其校正公式 (15%)，相關係數 $R(5%)$，當浮子讀數分別為 150, 200, 250, 300 時，其流量為多少？ (10%)