**King Fahd University of Petroleum & Minerals**

Electrical Engineering Department

EE570: Stochastic Processes (122)

**Quiz 1** (Time allowed: 15 Minutes)

**Dr. Ali Hussein Muqaibel**

Name: Key Serial Number

**(2 points)**

* + - 1. We are told that in a random experiment there are five possible outcomes. Which of the following statements is true?

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| 1. If, after 20 trials, one outcome has not been observed then the probability that it will occur in the next trial is increased. |
| 1. If, after 20 trials, one outcome has been observed more often than the others then the probability that it will not occur in the next trial is increased. |
| 1. **If, after 20 trials, one outcome has not been observed then the probability that it will occur in the next trial is unchanged.** |
| 1. If the outcomes are equally likely then the trials are independent.   **(2 points)**  **2.** The symmetric difference between two sets *A* and *B* is defined as follows:    Determine if and  all element excepts those that are common  **(3 points)**  **3.** Six dice are thrown simultaneously. A “straight” is the event when all numbers from 1 through 6 are observed. What is the probability that a “straight” occurs?  The probability of a single specific event is .  The number of possible permutations for straight =6!  The probability of all straight events =.6! =0.015432  **(3 points)**  **4.** A large class in stochastic processes at KFUPM is taking a multiple choice test. For one particular question with *m* proposed multiple choice answers, the fraction of students who know the answer is *p*; the others will guess. The probability of answering the question correctly is 1 for the students who know the answer and for the ones who guess. What is the probability that a student knows the answer given that he has answered it correctly? |

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Good Luck, **Dr. Ali Muqaibel**