United International University

School of Science and Engineering

CT-01 Trimester: Summer-2020 Section: C

Course Title: Probability and Statistics

Course Code: Stat 205 Marks: 20 Time: 30 Mins

(Answer all the questions)

1. Given that, $\boldsymbol{P(A \cup B) = 0.54}$ and $\boldsymbol{P(A' \cup B) = 0.67}$, find $\boldsymbol{P(B)}$. **[5]**

2. A bowl contains ***nine*** blue chips and ***five*** red chips. ***Two*** chips are to be drawn successively at random and without replacement. What is the probability that the first draw is red chip and second draw is blue chip? **[4]**

3. A die is loaded in such a way that an odd number is **twice** as likely to occur as an even number. If $\boldsymbol{A}$ is the event that a number less than $\boldsymbol{3}$ turns up and $\boldsymbol{B}$ is the event that a number divisible by $\boldsymbol{2}$ occurs. Find $\boldsymbol{P(A \cup B)}$ and $\boldsymbol{P(A \cap B)}$. **[6]**

4. If $\boldsymbol{P(A) = 0.8}$, $\boldsymbol{P(B) = 0.5}$, and $\boldsymbol{P(A \cup B) = 0.9}$, are $\boldsymbol{A}$ and $\boldsymbol{B}$ independent events? Why or why not? **[5]**