SOLUTIONS

King Fahd University of Petroleum & Minerals
Department of Mathematical Science
STAT-211-Term043-I-Quiz #4

Name: ID: Serial:

Question One (5-Points)

Write **True** if the statement is true or **False** if not:

1. Two events are considered to be mutually exclusive if the events are also independent. **False**
2. If E_1 and E_2 are independent and E_1 occurs then E_2 can't occur: **False**
3. The conditional probability of two mutually exclusive events always positive value: **False**
4. The interval $[-5,-1]$ can not be an event from any sample space because it is negative :**False**
5. The infinite set $\{1,2,3,4,...\}$ cant not be a possible values for a discrete random variable: **False**

Question Two (5-Points)

1. If the sample space consist of five elementary events such that:
   $P(e_1)=P(e_2)=0.15$, $P(e_3)=0.40$, $P(e_4)=2P(e_5)$,and $A=\{e_1,e_3,e_4\}$
   $B=\{e_2,e_3\}$ are tow events defined on the sample space, then $P(A \text{ or } B)=$

   a. **0.90** b.0.05 c.0.40 d. None

2. Refer back to the above sample space in part (1) , then $P(\overline{A \text{ and } B})=$

   a. 0.40 b.0.10 c.**0.60** d.0

3. If X is a random variable having the following Probability distribution, then $\mu_x=$

X	- 1	0	2	3	5
$P(x)$	0.2	0.15	.05	a	0.25

   a. -1.76 b.**2.2** c.0.35 d. None

4. Refer back to part(3), then σ_x^2 is equal to:

   a. **4.96** b. 2.04 c. 9.8 d. None

5. If X and Y two random variables, and $E(X)=4$, $E(Y)=-5$, then $E(X-Y)=$

   a. -9 b. **9** c. 1 d.-1