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

Name: ID: Serial:

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Question One (5-Points)

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

1. An event $E$ and its complement are mutually exclusive events :**True**
2. If $E_1$ and $E_2$ are independent and $E_1$ occurs then $E_2$ will occur: **False**
3. The conditional probability of two mutually exclusive events always positive value: **False**
4. The interval $[-2,5]$ can not be sample space because it contains negative values: **False**
5. The infinite set $\{1,2,3,\ldots\}$ is possible values for a continues random variable: **False**

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Question Two (5-Points)

1. If the sample space consist of five elementary events such that:
   $P(e_1)=P(e_2)=0.15$ ,$P(e_3)=0.10$, $P(e_4)=2P(e_5)$ ,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.0.80 d. None

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

   a. 0.90 b.0.10 c.0.40 d.**0.60**

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 | 0.25 | b |

   a. -1.76 b. **2.4** c.0.35 d. None

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

   a. 4.96 b. **5.64** c. 11.4 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