SOLUTIONS

King Fahd University of Petroleum & Minerals
Department of Mathematical Science
STAT-211-Term042-II
Quiz #4

Name: ID: Section: Serial:

Question One (5-Points)

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

1. An event *E* from the sample space *S* may be discrete or continuous: **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 zero: **True**
4. The infinite set $\{1,2,3,\ldots\}$ is possible values for a continues random variable: **False**
5. If $\sigma_{xy} = -1$ then there is a perfect negative linear relationship between X and Y : **False**

Question Two (5-Points)

1. If the sample space $S = \{-2,-1,3,5,7,8\}$, $A = \{-2,3,5\}$ and $B = \{3,7\}$ then $P(A \text{ or } B) =$

   a. $\frac{5}{6}$ b. $\frac{1}{2}$ c. $\frac{1}{6}$ **d.** $\frac{2}{3}$

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

   a. $\frac{1}{2}$ b. $\frac{1}{6}$ c. $\frac{2}{3}$ **d.** $\frac{5}{6}$

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

X	1	2.5	3.5	4	5
$P(x)$	.2	.15	.05	.35	.25

   a. 3.4 b. 16 c.1 d.-1

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

   a. 256 b. 1.43 c.3.734 **d. 2.04**

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