KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
DHAHRAN, SAUDI ARABIA
STAT 211: BUSINESS STATISTICS I

Semester 151
Major Exam Two
Monday October 19, 2015
Allowed time 90 minutes

Please **circle** your instructor name and section:

Instructor	**section number**
Esam Al-Sawie	1
Musawar Amin Malik	2

Name: Student ID#: Serial #:

Directions:

1) You must **show all work** to obtain full credit for questions on this exam.
2) **DO NOT round** your answers at each step. Round answers only if necessary at **your final step to 4 decimal places**.
3) You are allowed to use electronic calculators and other reasonable writing accessories that help write the exam. Try to define events, formulate problem and solve.
4) Do not keep your mobile with you during the exam, turn off your mobile and leave it aside

Question No	Full Marks	Marks Obtained
Q1	12	
Q2	6	
Q3	7	
Q4	8	
Q5	6	
Q6	6	
Total	45	

1. (2 points each). Suppose that of all individuals buying a Honda Accord Car, 65% customers include DVD player option in their purchase, 30% include leather seats option, and 10% include none of the two options. We are interested in knowing the inclusion of these options.

a. Write out the sample space for the problem.

b. Find the probability that the leather seats option was included given that the selected individual did not include the DVD player option.

c. Are the vents "the DVD player was included" (A) and the event "selected individual included the leather seats option" (B) independent? Reason?

d. Are the events "the DVD player was included" (A) and the event "selected individual included the leather seast option" (B) Mutually exclusive? Why or why not?

e. What is the probability that a selected individual included at least one of these two options?

f. What is the probability that a selected individual included exactly one of these two options?

2. (6 points). The effect of an antidepressant drug varies from person to person. Suppose that the drug is effective on 80% of women and 65% of men. It is known that 66% of the people who take the drug are women. What is the probability that the drug is not effective?

3. (2+5 points). The number of pizzas delivered to university students each month is a random variable with the following probability distribution.

X	0	1	2	3
P(x)	0.1	0.3	0.4	0.2

a. Find the probability that a student has received delivery of no less than two pizzas this month.

b. Determine the mean and variance of the number of pizzas delivered to students each month.

4. (2 points each). A company plans to select a team of five students from Gulf University for a business game competition from a pool of 18 undergraduates. Nine are from the second-year management course, five are third-year management and the remainders are from outside the management school. What is the probability that:

a. All five team members are second-year management?

b. No students from outside the management school are selected?

c. First two are second-year management and the remaining three are third-year management?

d. Find the average for the outside management students.

5. (2+4 points). A certain type of tomato seed germinates 90% of the time. An amateur gardener planted 25 seeds.

a. What is the probability that exactly 20 will not germinate?

b. What is the probability that 22 or fewer germinate?

6. (2+3+1 points). Snowfalls occur randomly and independently over the course of winter in a ski resort in Italy. The average is 3 snowfalls every week.

a. Define the variable of interest and distribution.

b. Find the probability of a snowfall today.

c. Find the average snowfalls in seventy days.