Prince Sultan University
STAT 101
Second Examination
First Semester 2013/2014, Term 131
Thursday, 28th November 2013
Dr. Bahha Eldin Abdalla & Dr. Jose Catapang

Time Allowed: 90 minutes

Maximum points: 40 points

Name: _____ _____ _____ ID Number # _____

(First) (Middle) (Last)

Important Instructions*:*

1. You may use CASIO scientific calculator that does not have programming or graphing capabilities.
2. You may NOT borrow a calculator from anyone.
3. You do NOT get special consideration if you forget your calculator.
4. Don't use notes or any notebook.
5. There should be NO talking during the examination.
6. Your exam will be taken immediately without any warning if your mobile is seen or heard.
7. You must show all your work beside the problem. Be organized.
8. You may use the back of the pages for extra space, but be sure to indicate that on the page with the problem.
9. This examination has ***9*** problems, some with several parts. Make sure that your paper has all these problems

Problem	Max points	Student's Points
1,2,3	12	
4,5,6	14	
7,8,9	14	
Total	***40***	

Q1 (3 points) The probability that Omar will live on campus and buy a new car is 0.37. If the probability that he will live on campus is 0.73, find the probability that he will buy a new car, given that he lives on campus.

Q2 (6 points) A group of 750 people were classified according to their gender and smoking habits. The results are given in the following table:

Gender	Smoker	Non-smoker
Male	210	315
Female	90	135

One person is selected at random from this group

(a) Find the probability that the selected person is a male or a smoker.

(b) Given that the selected person was a female. Find the probability that he is a smoker.

(c) Are the events non-smoker and female independent? Why?

Q3 (3 points) Let x be a binomial random variable with $n = 100$ and $p = 0.3$. Give the mean and the variance of the distribution of x.

Q4 (5 points) Of The PSU debating team has eight (8) students, 5 male and 3 female students. Three are selected to participate in the debate competition in Dubai. Find the probabilities:

(a) All 3 selected will be males.

(b) All 3 selected will be females.

(c) Two males and 1 female will be selected.

Q5 (4 points) The number of boating accidents on Lake Emilie follows a Poisson distribution. The probability of an accident is 0.003. If there are 1,000 boats on the lake during a summer month, find the probability that there will be 6 accidents.

Q6 (5 points) Based on a recent survey, 75.3% of students are using MOODLE (Learning Management System) in PSU. If 4 students are randomly selected, determine the following probabilities:

(a) None users of MOODLE

(b) All are users of MOODLE

(c) At least 1 uses MOODLE

Q7 (4 points) A factory of sardines manufactured different color labeled sardine cans to determine the buying preferences of consumers. Correspondingly, 10% preferred white labeled can, 11% preferred gold labeled can, 24% preferred green labeled can and 55% preferred red labeled can. If 12 randomly sampled consumers are asked regarding their preference, what is the probability that 3 will choose white label, 2 will choose gold label, 2 will choose green label and 5 will choose red label?.

Q8 (6 points) (a) How many ways can 4 baseball players and 3 basketball players be selected from 12 baseball players and 8 basketball players?

(b) In a board of directors composed of 8 people, how many ways can one chief executive officer, one director, and one treasurer be selected?

(c) A card is drawn randomly from a deck of ordinary playing cards. You win $10 if the card is a spade or an ace. What is the probability that you will win the game?

Q9 (4 points) Suppose that when a job candidate interviews for a job at RJB Enterprises, the probability that he or she will want the job (*A*) after the interview is 0.68. Also, the probability that RJB will want the candidate (*B*) is 0.36. The probability $P(A|B)$ is 0.88.

1. Find $P(A \text{ and } B)$

2. Find $P(B \text{ or } A)$