Prince Sultan University
STAT 101
Second Examination
First Semester 2011/2012, Term 111
Wednesday, 7th December 2011
Dr. Bahha Eldin Abdalla

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 **13** problems, some with several parts. Make sure that your paper has all these problems

Problem	Max points	Student's Points
1,2,3,4,5,6	14	
7,8,9,10	15	
11,12,13	11	
Total	***40***	

Q1 (2 points) During a sale at a men's store, 16 white sweaters, 3 red sweaters, 9 blue sweaters, and 7 yellow sweaters were purchased. If a customer is selected at random, find the probability that he bought a sweater that was not white.

Q2 (2 points) A student and a professor each choose a number between 1 and 6 (1 and 6 are both possible choices). What is the probability that the two choose the same number?

Q3 (3 points) There is a 0.39 probability that Ahmad will purchase a new car, a 0.73 probability that Omar will purchase a new car, and a 0.36 probability that both will purchase a new car. Find the probability that neither will purchase a new car.

Q4 (2 points) Given eight students, three of which are female, if two students are selected at random, without replacement, what is the probability that both students are female?

Q5 (3 points) The top five countries for movie releases so far this year are the United States with 471 releases, United Kingdom with 386, Japan with 79, Germany with 316, and France with 132. Choose 1 new release at random. Find the probability that it is German given that it is European.

Q6 (2 points) How many ways can a student select 2 electives from a possible choice of 10 electives?

Q7 (6 points) A manufacturer makes three models of a television set, models A, B, and C. A store sells 40% of model A sets, 40% of model B sets, and 20% of model C sets. Of model A sets, 3% have stereo sound; of model B sets, 7% have stereo sound; and of model C sets, 9% have stereo sound.
(a) Draw a tree diagram and determine the sample space.

(b) If a set is sold at random, find the probability that it has stereo sound.

Q8 (2 points) A student takes a 6 question multiple choice quiz with 4 choices for each question. If the student guesses at random on each question, what is the probability that the student gets exactly 4 questions correct?

Q9 (3 points) White copy paper is offered in 5 different strengths and 11 different degrees of brightness, recycled or not, and acid-free or not. How many different types of paper are available for order?

Q10 (4 points) According to survey records, 75.4% of women aged 20 – 24 have never been married. In a random sample of 250 young women aged 20 – 24, find the mean and the standard deviation for the number who are or who have been married.

Q11 (4 points) Let x be a binomial random variable with $n = 12$ and $q = 0.7$. Use the Poisson approximation to find $P(4 < x \leq 6)$.

Q12) (3 points) Of the 50 automobiles in a used-car lot, 10 are white. If 5 automobiles are selected to be sold at an auction, find the probability that exactly 2 will be white.

Q13 (4 points) The probability that a person will have 0, 1, or 2 dental checkups per year is 0.3, 0.6, and 0.1, respectively. If seven people are picked at random, what is the probability that two will have no checkups, four will have one checkup, and one will have two checkups in the next year?

Q4 (4 points extra) A game is set up as follows: All the diamonds are removed from a deck of cards, and these 13 cards are placed in a bag. The cards are mixed up, and then one card is chosen at random (and then replaced). The player wins according to the following rules.
If the ace is drawn, the player loses $20.
If a face card is drawn, the player wins $10.
If any other card (2 – 10) is drawn, the player wins $2.
How much should be charged to play this game in order for it to be fair?