KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
DHAHRAN, SAUDI ARABIA

STAT 302: Statistical Inference
Semester 151
First Major Exam
Thursday September 17, 2015
8:00 – 8:50 am

Name: ID #:

Question No	Full Marks	Marks Obtained
1	**05**	
2	**02**	
3	**02**	
4	**05**	
5	**06**	
Total	**20**	

An auto insurance company insures an automobile worth 5,000 SR for one year. If there is partial damage to the car, the amount X of damage (in thousands) follows a uniform distribution with density function:

$$f(x) = \frac{1}{2}; \qquad 1 < x < 3$$

A sample of size 3 claims is taken from the above density.

Q1. (5 points) Find the probability that the minimum damage is greater than 1500.

Q2. (2 points) Find the probability that the maximum damage is less than 3000.

Q3. (2 points) Find the probability that the sample mean is equal to 2.

Q4. (5 points) Find the probability that the sample median is less than 2.5

Q5. (6 points) Find the density function of sample range ($X_{(n)} - X_{(1)}$).

With the Best Wishes